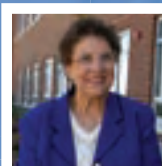


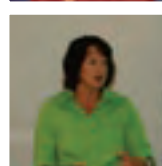
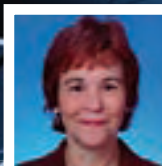
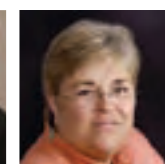
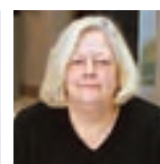
Carolina NURSING

HEALTH PROMOTION
& DISEASE PREVENTION

GRADUATE EDUCATION



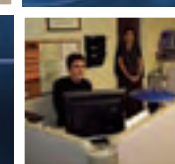
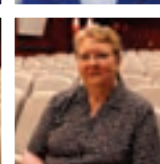
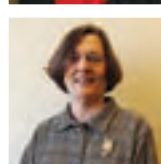
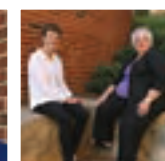
CHRONIC ILLNESS
& SYMPTOM MANAGEMENT



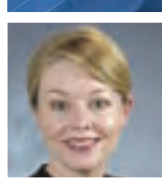
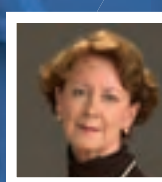
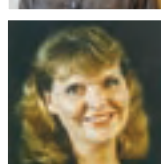
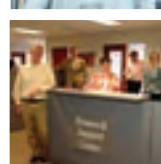
LIFESPAN

RESEARCH CHRONICLE

GENETICS



RESEARCH
ACTIVITY



SYSTEMS & CARE QUALITY

RESEARCH
INFRASTRUCTURE



QUALITATIVE AND MIXED
RESEARCH SYNTHESIS

FROM THE *Dean*

Dear Alumni and Friends,

As the Research Chronicle goes to press, I am on my way to Bangkok for the conference we are co-sponsoring with Yale and Mahidol University Schools of Nursing, "The International Nursing Conference on Prevention and Management of Chronic Conditions: International Perspectives." Our faculty has led many scientific developments in the care of people with chronic conditions, as evidenced by the stories in this edition. Faculty, alumni, doctoral students and Thai nurses who have been visiting scholars at UNC Chapel Hill will be presenting papers during the three-day conference, which will focus on topics such as the influence of globalization on health, chronic illness across the lifespan, complementary and alternative therapy for chronic illness, family caregiving, and access to and delivery of care in chronic illness. We hope that this conference of nursing scholars from around the world will stimulate new ideas as participants analyze the differences in how chronic conditions are understood, managed, and experienced amongst peoples of different cultures.

This year's issue of the Research Chronicle will give you a glimpse into the busy world of research at the School. This past year alone, our faculty was awarded over \$9 million in extramural research funding. Fortunately, with the new building addition, there is space to accommodate all the personnel involved in accomplishing these projects. I hope you'll enjoy reading about the broad range of topics our researchers are exploring including health promotion and disease prevention, chronic illness and symptom management, genetics, healthcare systems and quality, and mixed research synthesis. We will also tell you about the School's growing research infrastructure and the support units where our researchers find the assistance they need in their endeavors.

At a time when our nation's health care system faces many challenges, it is our goal to continue to be a leading school of nursing that encourages inquiry, generates and disseminates new knowledge, and integrates that knowledge into practice. We are scientists and researchers, but more than that we are nurses with compassion and a natural desire to protect others and promote quality of life for all. Enjoy reading about the faculty and staff who are leading research projects that represent the cutting edge of nursing scholarship and practice.

Sincerely,

Linda R. Cronenwett

Linda R. Cronenwett, PhD, RN, FAAN
Dean & Professor

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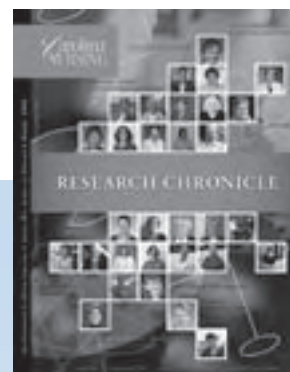
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6 Stress & Cardiovascular Health in Black Men and Women

Debra Brown
PhD, RN, CFNP, CANP

Malaria, cancer, hepatitis, polio, measles. . . These are just a few of the diseases that affect people all over the world everyday, from those battling with disease, to healthcare providers who treat disease, to family members who care for loved ones suffering from disease.

In the U.S., we are seeing the spread of preventable diseases like diabetes, HIV/AIDS and cardiovascular disease. By understanding the factors that contribute to the spread of preventable disease, researchers can begin to develop interventions and promote healthier lifestyles.

The National Center for Health Statistics reports that 30%, or 60 million adults, are obese in the U.S. Even more alarming is the increase in obesity among children which has tripled since the early 1980s to 16%, or nine million children according to the Center. Obesity increases the risk for a number of diseases including type 2 diabetes and heart disease.

School of Nursing (SON) researchers, like Dr. Joanne Harrell, are doing something about it. As the number of children diagnosed with obesity and diabetes grows annually, Harrell is investigating how lifestyle changes can prevent type 2 diabetes and cardiovascular disease, which commonly accompany obesity, in children.

The spread of HIV/AIDS has become a worldwide epidemic inflicting an estimated 40 million people according to the Joint United Nations Programme on HIV/AIDS (UNAIDS). The number of cases of HIV/AIDS in the U.S. is also on the rise. In North Carolina alone, nearly 7,000 people are living with HIV/AIDS according to the Centers for Disease Control.

Researchers at the SON, including Drs. Chris McQuiston and Catherine Ingram Fogel, are studying HIV/AIDS among vulnerable populations. Both researchers are seeking to understand better how lifestyles and behaviors contribute to the spread of HIV/AIDS, and how interventions they have developed can protect vulnerable populations from contracting or spreading the diseases.

Cardiovascular disease statistics in the U.S. are staggering. According to the Centers for Disease Control, cardiovascular disease is the leading cause of death in the U.S. accounting for 40% of all deaths. The latest numbers from the National Center for Chronic Disease Prevention and Health Promotion show that African Americans are disproportionately affected by heart disease and stroke.

Researchers, like Dr. Debra Brown, at the SON are working to understand why these health disparities exist, and how cardiovascular diseases and related factors like hypertension affect African Americans.

Read on to see what four SON researchers are doing to prevent diseases and promote healthier lifestyles for people across the state, nation and globe.

Cardiovascular Health in Children and Youth

Joanne Harrell, PhD, RN, FAAN, FAHA

"Our children are at risk for diabetes and cardiovascular diseases (CVD)," said Dr. Joanne Harrell who has been studying the development and prevalence of insulin resistance syndrome, which occurs when tissues in the body stop responding to insulin, in children and adolescents through her groundbreaking studies "Cardiovascular Health in Children and Youth" or CHIC.

Funded by the National Institute of Nursing Research, National Institutes of Health, CHIC III is a continuation of Harrell's previous two studies—CHIC I funded in 1990 and CHIC II funded in 1994.

"No other studies have examined insulin resistance in youth with regards to eating habits, physical activity and maturational level, all of which can affect various disease risk factors," said Harrell. Insulin is a natural hormone that is needed for the body to use sugar.



The highly successful CHIC program is being replicated by researchers in Japan and Korea. Brant Nix (left), SON Biobehavioral Laboratory manager, speaks with Young Ran Tak, PhD, RN (center) and Young Kim, MS, RN (right). Tak and Kim visited the SON from Seoul, South Korea to learn more about the CHIC studies and how to replicate them in Korea.

However, the body can sometimes become resistant to insulin and makes excess insulin. The increased insulin can lead to pre-diabetes or type 2 diabetes in adolescents and adults, and CVD in adults.

CHIC evaluated youths age 8-18 annually for risk factors of CVD for four years or until they graduated from high school. Researchers measured blood pressure; body mass index; skin folds; waist and other circumferences; insulin, glucose, and lipids via vein puncture; CV fitness; eating habits; physical activity; and smoking to examine the emergence, aggregation and development of risk factors across all stages of puberty. Researchers are also gathering family health history and habits from parents.

The CHIC study implemented eight-week interventions in elementary and middle schools to test the efficacy of appropriate physical education and health classes in reducing the incidence of cardiovascular disease risk factors.

"The interventions have been very successful in reducing body fat and serum cholesterol in the children and in increasing their fitness levels, physical activity levels and knowledge of healthy lifestyles," said Harrell. The interventions have been so successful that CHIC has been replicated by researchers in Japan, and will soon be implemented in South Korea.

Findings from the first CHIC study can be found in the August 1998 issue of *Pediatrics*, volume 102, number 2. The research team is looking to publish findings from CHIC III very soon.

CHIC III



Research assistant Debo Odulana (left) and Todd Hamer (right) take measurements for CHIC III.

To have lasting effects on the health of students, similar interventions must be implemented in schools for several years. Harrell and her interdisciplinary research team are now taking part in a national multi-site study funded by the National Institute of Diabetes, Digestive and Kidney Diseases, National Institutes of Health. The study, which they helped design, will test a multi-year physical activity, nutrition and classroom intervention to prevent obesity and other risk factors for type 2 diabetes in middle school students.

To learn more about CHIC, visit <http://www.unc.edu/depts/chic/>.



Joanne Harrell
PhD, RN, FAAN, FAHA
Frances Hill Fox Distinguished Professor of Nursing

Dr. Joanne Harrell has been studying the development and prevalence of insulin resistance syndrome in children and adolescents through her groundbreaking "Cardiovascular Health in Children and Youth" or CHIC studies.

The highly successful CHIC program is being replicated by researchers in Japan and Korea.

Programs of research:

Interventions to improve cardiovascular health across the life span; Physical activity measurement; Energy expenditure of common activities of children and adolescents; Health behaviors in children, adolescents and adults; Physiologic variables in research; School-based research; Risk factors for heart disease in children, adolescents and adults; Assessment of lipid profiles in children, adolescents and adults; Assessment of smoking prevalence in children and adolescents; Obesity and Type 2 diabetes mellitus in children and adolescents

Research projects:

Principal Investigator, "Cardiovascular Health in Children and Youth (CHIC)" Funded by the National Institute of Nursing Research, R01 NR01837, 1990-2006. Co-Investigators: Shrikant Bangdiwala, Marsha Davenport, Robert McMurray.

Site Principal Investigator, "Physical Activity in Youth—Preventing Type 2 Diabetes (STOPP-T2D)," National Institute of Diabetes & Digestive & Kidney Diseases, National Institutes of Health, 2002-2009. Co-Investigators: Shrikant Bangdiwala, Anthony Hackney, Robert McMurray.

Education:

PhD, Nursing Research, University of Texas, Austin, TX

MN, Medical Surgical Nursing, University of Florida, Gainesville, FL

BSN, Avila College, Kansas City, MO

BA, Biology, College of St. Catherine, St. Paul, MN



Chris McQuiston
PhD, RN, FNP
Associate Professor

Dr. Chris McQuiston, an expert in community-based participatory research, is trying to understand better the effects of migration on gender roles and HIV risks in her study "Gender, Migration and HIV Risks Among Mexicans," a binational, multi-method study funded by the National Institute of Nursing Research, National Institutes of Health.

Programs of research:

Gender roles and migration; Community-based research; Culture specific HIV interventions for Latinos; Lay (community) models of illness; Participatory action research; Empowering approaches training (Frierian)

Research projects:

Principal Investigator, "Gender, Migration and HIV Risks Among Mexicans," Funded by the National Institute of Nursing Research, R01 NR08052, 2001-2005. Co-investigator, Emelio Parraclo.

Education:

PhD, Nursing, Wayne State University, Detroit, MI

MSN, Family Nurse Practitioner, Community Health, Medical College of Virginia, Richmond, VA

BSN, University of Cincinnati, Cincinnati, OH

Gender, Migration and HIV Risks among Mexicans

Chris McQuiston, PhD, RN, FNP

"The prevalence of HIV among Latinos in the U.S. has increased markedly in recent years," said Dr. Chris McQuiston, who is investigating the issue in her study, "Gender, Migration and HIV Risks Among Mexicans," a binational, multi-method study funded by the National Institute of Nursing Research (NINR), National Institutes of Health.

Using community-based participatory research (CBPR), McQuiston aims to understand better the effects of migration on gender roles and HIV risks. In collaboration with Dr. Emilio Parrado, assistant professor of sociology at Duke University, and Horizonte Latino, a community-based research group from Durham, NC, McQuiston developed a theory about HIV in the Latino community.

The theory is based on 689 surveys and 30 in-depth interviews conducted by the research team in Durham with recently arrived immigrants from Mexico and Central America. The research team developed a model, "Migration Circle and Risks of AIDS," based on the theory that outlines areas of vulnerability that put Latinos at risk for HIV/AIDS.

As part of the participatory research process, Horizonte Latino contributed to

the conceptual development of the study. After some basic research training, McQuiston worked with the community-based research group to develop the survey. Horizonte Latino suggested revising the language in the survey to use phrases familiar to Central Americans. This way, if the interviewers needed to communicate with the participants using a language other than "Mexican Spanish," they all used consistent words and phrases.

McQuiston trained Horizonte Latino to do field work and conduct the surveys along with less structured interviews. Horizonte Latino also took part in the cultural analysis of data collected in the U.S., as well as data collected from 800 surveys conducted in three states in Mexico.

The surveys revealed that Latinas tend to lose power when they immigrate to the U.S. because support from family and friends is lacking. The research team believes that partners may be threatened by the changing role of women in the U.S. and react by being more controlling.

The surveys further revealed that nearly 50% of single migrant men, and migrant men whose partners were still in the country of origin, sought the services of a commercial sex worker (CSW).

However for migrant men whose partners were with them, the percentage using the services of a CSW decreased to 8%.

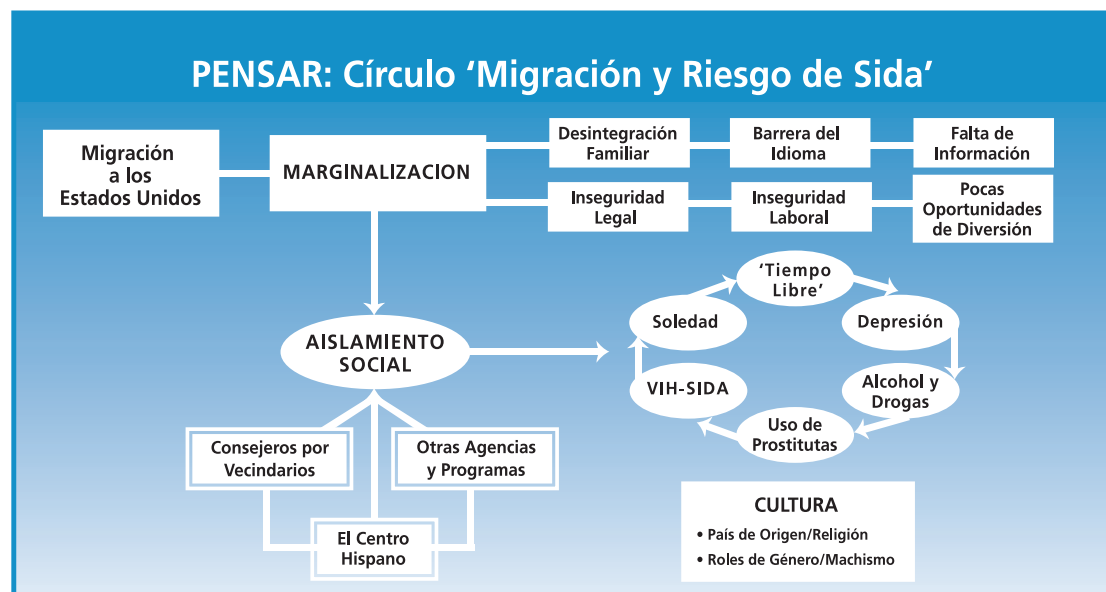
"We are concerned that men who come to the U.S. to work may be taking HIV home to their wives and that HIV is spreading in their home countries as well as here in the U.S.," said McQuiston.

McQuiston is also using data gathered from the surveys to develop a gender typology that categorizes women by behaviors to evaluate their risk for HIV/AIDS and create tailored interventions.

Survey results have been widely published. To learn more, see Faculty Publications on page 43 for references.

McQuiston and her research team will use the data to develop interventions for the Latino community aimed at addressing social isolation and risk behavior for HIV associated with migration.

McQuiston has been so successful in using CBPR to develop and conduct culture specific research that she was asked to share her approach on an NINR panel entitled "Cultural Dynamics in HIV Biobehavioral Research," this past September.



"Migration Circle and Risks of AIDS" model. ©Reprinted with permission.

Helping Women Prisoners Reduce HIV Risk After Release

Catherine Ingram Fogel, PhD, RNC, FAAN

"I first started working with women who were HIV positive at the North Carolina Correctional Institute for Women, and I saw them die because they didn't know how to protect themselves from HIV. They were forgotten and marginalized. And, I didn't want to see that continue. I knew I could do something," said Dr. Cathie Fogel, a women's health expert who has been working with incarcerated women for over 20 years.

Fogel said a number of factors can lead to increased HIV risk for women who are incarcerated. "Many of the incarcerated women I work with treat sex like a commodity to get what they need or want. Some of them have histories of promiscuity and prostitution, and because they receive shorter sentences and recidivism to prison is common, these women become reservoirs of infection between prisons and their home communities," said Fogel.

Fogel, in collaboration with the North Carolina Department of Correction, the School of Nursing and the Center for AIDS Research at The University of North Carolina at Chapel Hill, developed and tested primary prevention Women-Centered Risk Reduction Intervention (WCRI) for incarcerated women. The study "Helping Women Prisoners Reduce HIV Risk After Release," funded by the National Institute of Mental Health, National Institutes of Health, is designed to raise HIV awareness, reduce risky behaviors, enhance sexual protective practices, and strengthen relationships among women in the community following their release from prison.

Few prisons have programs in place to educate female prisoners about HIV. Those prisons that do are usually making minimal effort, offering incarcerated women the option of viewing an infor-

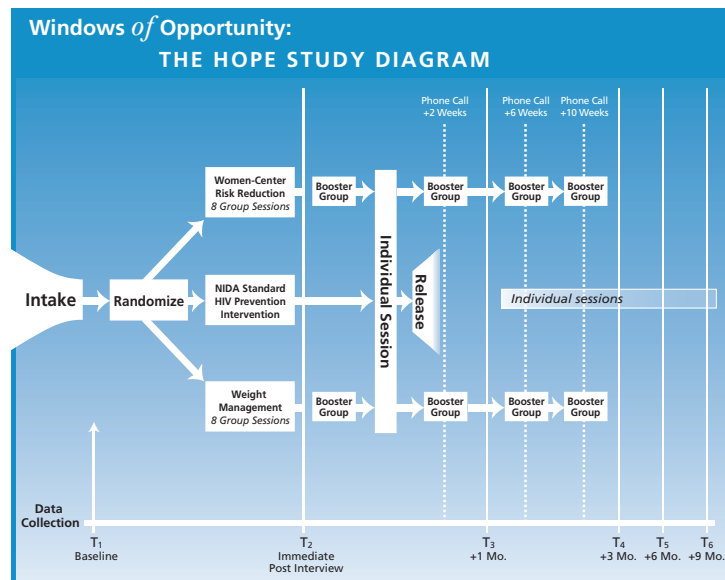


Figure illustrates the flow of the study for participants.

mational video. The WCRI is designed to go beyond this basic step. "The women are engaged in informational group sessions where they are taught how to reduce their risk," said Fogel. "And we follow up with each of the women individually to address her specific needs, even after they've been released from prison."

The WCRI consists of ten in-prison group sessions (eight intervention classes, a graduation session and group follow-up booster session), an individual prerelease meeting and three phone booster sessions after release from prison. Fogel, along with an intervention research assistant (IRA), conducts the group intervention sessions. The IRA is a trained nurse.

A three-group randomized control design is used to evaluate WCRI's effectiveness. One of the control interventions, NIDA (National Institute on Drug Abuse) Standard Intervention for HIV Prevention, allows Fogel to examine WCRI's content. A second control group, Staying Fit and Healthy, allows Fogel to control for the amount of time and attention the WCRI subjects receive.

WCRI is beginning its third year. Fogel said one of the goals with the

WCRI is to reduce HIV infection in vulnerable women, thus saving lives, decreasing chronic illnesses, reducing family disruptions and decreasing health care costs.

Fogel and her team are beginning to finalize the data from the first group of women who completed the study nine months after being released from incarceration.

The Centers for Disease Control and Prevention recently funded Fogel's new study "Reducing Sexual Risk in Southern HIV-Positive Women." Fogel and her research team will adapt and tailor HIV risk reduction nurse-delivered prevention interventions to 330 women with HIV at health departments in North Carolina. The research team will evaluate the efficacy of the intervention using a randomized wait-list comparison design with a six-month follow up period.



Catherine Ingram Fogel
PhD, RN, FAAN

Professor and MSN Coordinator,
Women's Health Care Nurse Practitioner

"I have learned so much from the women I work with about courage, survival and endurance, in spite of all the horrific odds against them," said Fogel.

Programs of research:

Health promotion/disease prevention for disadvantaged women; Incarcerated women; STD/AIDS prevention for incarcerated women; Pregnant prisoners; Mothers in prison; Weight reduction in incarcerated women; Eating disorders and women prisoners; Violence and women prisoners; HIV/AIDS and women

Research projects:

Principal Investigator, "Helping Women Prisoners Reduce HIV Risk After Release," Funded by the National Institute of Mental Health, R01 MH65145, 2003-2008. Co-Investigators: Adaora Adimora, Michael Belyea, Anne Fishel, Andrew Kaplan, Lara S. Shain, Becky L. Stephenson.

Principal Investigator, "Reducing Sexual Risk in Southern HIV-Positive Women," Funded by the Centers for Disease Control and Prevention, 2005-2009. Co-Investigators: Andrew Kaplan, Margarete Sandelowski.

Education:

PhD, Sociology, Women's Studies, North Carolina State University, Raleigh, NC

MS, Nursing, Public Health, Anthropology, University of North Carolina at Chapel Hill, Chapel Hill, NC

Certified, Women's Health Care Nurse Practitioner and Sex Educator/Counselor

BSN, University of North Carolina at Chapel Hill, Chapel Hill, NC



Debra Brown
PhD, RN, CFNP, CANP

Assistant Professor & Family Nurse
Practitioner Program Coordinator

Dr. Debra Brown, assistant professor and FNP coordinator at the SON, hopes the work she is doing will provide a profile for early identification of Black men and women at risk for developing hypertension.

Programs of research:

Stress and coping; Cardiovascular disease and hypertension; Black American health issues; Health disparities and sociopsychophysiological influences; Family nurse practitioner

Research projects:

Principal Investigator, "Perceived Stress, Cortisol and Cardiovascular Responses During Sleep in Black Women," Funded by the Center for Research on Chronic Illness, School of Nursing, The University of North Carolina at Chapel Hill, National Institute of Nursing Research, National Institutes of Health, 2003-2005. Co-Investigator: Kathleen Light.

Principal Investigator, "Stress and Cardiovascular Responses in Black Men," Funded by UNC's Program on Ethnicity, Culture and Health Outcomes (ECHO), 2004-2005.

Education:

PhD, Nursing/Health Promotion/
Risk Reduction, University of
Michigan, Ann Arbor, MI

Post Master's, Teaching,
University of Pennsylvania,
Philadelphia, PA

MSN, Nurse practitioner,
Howard University,
Washington, DC

BSN, University of Virginia,
Charlottesville, VA

Stress & Cardiovascular Health in Black Men and Women

Debra Brown, PhD, RN, CFNP, CANP

"While I was pursuing my MSN in the 1980s, I developed painful, stress-related Temporal Mandibular Joint Syndrome," said Dr. Debra Brown, assistant professor and FNP coordinator at the SON. "Not long after, while working in my clinical practice, I became intrigued by the number of young Black men I was seeing with hypertension. These events prompted me to look more closely at the effects of stress on a person's physical well being," said Brown.

Black American men and women have the highest hypertension and cardiovascular disease rates in the world explained Brown. However, many of the young Black men she was seeing in her practice were not overweight and did not fit the typical risk profile for hypertension.

"I started to read and attend conferences to learn more about cardiovascular disease and hypertension. One explanation that was being put forward at that time was that Blacks were genetically and biologically inferior to other races and therefore more susceptible to diseases. This, of course, did not sit well with me and so I started to follow my instincts leading me to the associations between stress and disease."

In her study, "Perceived Stress, Cortisol and Cardiovascular Responses During Sleep in Black Women," funded

by the School of Nursing's Center for Research on Chronic Illness, Brown is exploring how daily hassles, negative emotions and cortisol influence cardiovascular responses in Black women.

In a related study "Stress and Cardiovascular Responses in Black Men," funded by UNC Chapel Hill's Program on Ethnicity, Culture and Health Outcomes, Brown is exploring the relationships among environmental factors (age, body mass index, genetic predisposition and income), psychological factors (perceived stress, negative emotions and chronic active coping), psychological stress responses (cortisol levels and heart rate variability) and blood pressure.

Psychological factors are thought to contribute to the development of hypertension and cardiovascular disease. Perceived stress, negative emotions and chronic active coping are believed to lead to increased cortisol levels and elevated blood pressure. Psychological stress is also thought to affect the autonomic nervous system leading to decreased heart rate variability, which has also been associated with hypertension.

Brown's immediate goals with the studies are to provide data profiling risks

"To stop these devastating conditions related to cardiovascular disease in Black men and women, we need new, creative, expanded methods for studying blood pressure and hypertension"

for the development of elevated blood pressure in Black men and women.

Recent evidence suggests that sleep is a critical period of vulnerability for the development of hypertension in Blacks. "Due to decreased heart rate variability and failure of blood pressure to decrease to appropriate levels during sleep, Black men and women are vulnerable to sustained high blood pressure, stroke and possible myocardial infarctions," said Brown.

"Ultimately, we hope the data will provide a profile for early identification of those most vulnerable to hypertension and provide a foundation for developing interventions," said Brown.

"To stop these devastating conditions related to cardiovascular disease in Black men and women, we need new, creative, expanded methods for studying blood pressure and hypertension," said Brown.



FOCUS *on* Chronic Illness and Symptom Management

Nearly 133 million Americans are living with a chronic condition according to Improving Chronic Illness Care, a national program of the Robert Wood Johnson Foundation. This staggering statistic is one of the reasons why researchers at the School of Nursing have chosen to emphasize the prevention and management of chronic health conditions across the lifespan.

In this emphasis, populations at-risk for developing chronic health problems, and for suffering more intense morbidity and early mortality because of them are of particular interest. These populations are vulnerable to severe manifestations of disease by virtue of such factors as age, gender, geography, history, race/ethnicity, biological markers of risk, and/or socioeconomic class.

While the prevention of chronic health conditions involves activities that promote health and prevent disease, the management of chronic health conditions involves assisting people to manage symptoms and side effects of disease and treatment, to adjust well to emotional, family, social, and other sequelae, and generally to live well with these conditions.

The following pages highlight SON researchers who are working to understand chronic illness and empower those living with chronic conditions to manage their symptoms for a better quality of life.



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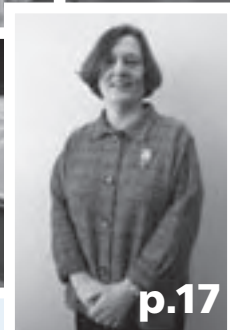
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Linda S. Beeber
PhD, RN, CS

Professor and MSN Coordinator

Programs of research:

Depressive symptoms in women, specifically mothers of infants and young children; Interventions for depressive symptoms, primary care and community applications; Interpersonal Theory of Nursing (Peplau), development, extension and application; Advanced Practice Psychiatric Mental Health Nursing, all groups and populations, includes psychotropic medications and psychopharmacotherapy, individual, group, milieu and family therapy modalities; General linear models; Diversity and inclusiveness in nursing; Active learning and classroom evaluation strategies in teaching

Research projects:

Principal Investigator, "Reducing Depressive Symptoms in Low-Income Mothers," Funded by the National Institute of Mental Health, National Institutes of Health, R01 MH65524, 2003-2008. Co-Investigators: Regina Canuso, Diane Holditch-Davis, Merle Mishel, Todd Schwartz.

Principal Investigator, "Early Head Start Latina Mothers: Reducing Depression and Improving Infant/Toddler Mental Health," Funded by the Department of Health and Human Services Administration for Children and Families, HSR 0049, 2002-2006. Co-Investigators: Diane Holditch-Davis, Krista Perreira, Todd Schwartz.

Principal Investigator, "Alumbrando el camino/Bright Moments" Funded by the Department of Health and Human Services Administration for Children and Families, Co-Investigators: Todd Schwartz, Diane Holditch-Davis.

Education:

PhD, Nursing, University of Rochester, Rochester, NY

MA, Mental Health Nursing, New York University, New York, NY

BS, Nursing, Virginia Commonwealth University, Richmond, VA

Reducing Depressive Symptoms in Mothers

Linda S. Beeber, PhD, RN, CS

"Depressive symptoms are more prevalent, severe and persistent in mothers of low-income because of the complex life problems they face with lean resources and poor social support," said Dr. Linda Beeber, SON professor and mental health expert. "These symptoms can make it hard for mothers to get the education, job training or enrichment programs that can help break them out of poverty, and their children can suffer emotionally and developmentally as their mothers sink deeper into depression with no hope of improving the situation."

Early in her career, Beeber knew she "wanted to discover ways to help depressed, low-income women." But, she was told repeatedly that the topic would never get funded. "I believed that using interpersonal nursing theory to create a nurse-to-mother intervention had great power, especially with mothers of low-income who were not seen as reachable through traditional therapies," said Beeber.

Early predictions seemed true for the researcher as some of her attempts for funding were not successful. The breakthrough came, she said, when as a clinician-scientist, she joined forces with a clinician in the field.

"A former graduate student of mine, Regina Canuso, was working as a psychiatric mental health clinical nurse specialist in an urban Early Head Start Center [federal enrichment programs created for infants and toddlers of low-income families]. She observed that hyperactive children seemed to have depressed mothers. We started observing together and reading the literature. When I was able to make the connection between mothers' depression and children's behavior, language difficulties and developmental lags, the subject became very compelling. Seeing the devastating impact of mothers' depression on these very young children gave me the evidence and the will to make this research happen," said Beeber.

At the time, Beeber still needed to

accomplish quite a bit of work on her own development as a scientist. She credits her move to Carolina as a turning point. "UNC gave me access to the experts I needed to help me be successfully funded—experts like Sandy Funk (proposal development and measurement), Merle Mishel (intervention theory development) and Diane Holditch-Davis (child developmental outcomes)."

Beeber continued to persevere and, with Regina Canuso as a co-investigator, submitted a proposal to National Institute of Mental Health (NIMH), National Institutes of Health, for a five-year project researching means of reducing depressive symptoms in low-income mothers. The proposal was designed to conduct an intervention study to test whether a targeted interpersonal psychotherapy intervention delivered in the home by advanced-practice psychiatric mental health nurses could help depressed mothers break the cycle during the first three years of their child's life when development is so dependent on a mother's energy. "Doing so will hopefully reduce the insult of poverty to children at a critical time in their life," said Beeber.

Then, in 2002 while revising her proposal for funding from NIMH, Beeber saw a call for proposals that could not possibly have fit her expertise more precisely. The Department of Health and Human Services Administration for Children and Families (ACF) was seeking proposals targeted at investigating infant mental health in Early Head Start programs. Beeber saw an opportunity to adapt her intervention for Spanish-speaking mothers in Early Head Start using trained interpreters working as a team with the psychiatric mental health nurses. The North Carolina Early Head Start programs were serving a large number of such mothers. The intervention would reach mothers who had little access to mental health services in their native language.

The ACF awarded Beeber \$800,000 for "Early Head Start Latina Mothers: Reducing Depressive Symptoms and Improving Infant/Toddler Mental Health," a four-year study of Early Head

Start infants. The study intervention was tailored for Spanish culture and language and is being tested in three North Carolina Early Head Start programs.

Eight months into that study, Beeber received word that NIMH had awarded her \$3,510,632 for "Reducing Depressive Symptoms in Low-Income Mothers," a five-year study of low-income mothers. Beeber is testing this intervention at six Early Head Start programs with mothers who speak English.

Beeber's projects are treasure troves of experience for students. Currently six masters and doctoral students and one post-doctoral fellow, are working with her to complete a number of tasks including collecting data and acting as interpreters between the mothers and the psychiatric mental health nurses who are conducting Beeber's intervention. All of the students are currently working with project members on manuscripts for publication, and many of them have made poster presentations reporting on their experiences and the progress of the projects.

In October, Beeber successfully received additional funding from ACF to build on the Early Head Start research by creating a curriculum "Alumbrando el camino/Bright Moments" that Early Head Start staff will use more effectively to support parents with depressive symptoms.

"Together, these studies form an integrated program that could be replicated in Early Head Start programs and other programs that enrich the lives of vulnerable children living in poverty. I hope that by reaching out to these mothers, children and families, we will be able to help turn around some of the factors that perpetuate the negative impact of living poor in this country."

Diabetes Care for Older African-American Women

Anne H. Skelly, PhD, RN, ANP-C

In her research, Dr. Anne H. Skelly has applied the lessons she learned from patients while working as a diabetes/endocrinology nurse practitioner in the Erie County Medical Center in Buffalo, NY.

"I've been working with people with diabetes and their families since 1976. What I became interested in as a nurse practitioner was how well some people were able to manage their diabetes and conversely how much other people seemed to struggle. I wanted to know how we could help people better manage their diabetes. The population I worked with was African-American women, and I learned about diabetes

participated in dozens of research projects. She was principal investigator of three studies at the School of Nursing. In those, she developed a model for diabetes-symptom management, investigated health outcomes for older African-American women with diabetes, and looked at symptom-focused diabetes care for rural African-American elders, subjects that clearly foreshadowed her current research, "Symptom-Focused Diabetes Care for African American Elders," funded by the National Institute of Nursing Research (NINR), National Institutes of Health.

In 2000, the NINR funded her three-year investigation of ethnic variations in knowledge and beliefs of diabetes mel-

"One of the things that really struck us was that many African-American families didn't talk about diabetes, and we were not sure whether this was unique to this particular sample, so we went to our community advisory board, which was African-American women, and I talked with other people in the community. They said that in many families this is true. It is a perception that diabetes is your own personal business. So therefore what families know is what they observe, which is often the most negative things about diabetes. They don't see people necessarily doing well," said Skelly.

"The other interesting point was that the Latino population were very health conscious and could describe what a healthy diet was but saw no relationship between being overweight and lack of physical activity and developing diabetes, and again that gave us a direction, just getting that information out about preventing diabetes through these basic kinds of lifestyle changes, especially in kids."

The Skelly team has "gotten out" their findings by going straight to the people who need them most. They spent an evening at the Chatham County Health Department in Siler City explaining their findings to 55 people from different agencies serving the study area. They have also created a glossy brochure written for a lay audience presenting the findings and mailed it to participants. Information was also given to the National Organization of Nurse Practitioner Faculties, which presented Skelly with its 2004 Outstanding Research Award.

The diabetes symptom-focused study of older rural African-American women is still in the field delivering a home-based intervention tailored to fit the symptoms of 55-year-old and older African-American women, and results are still two years in the future.

Skelly hopes to submit a proposal to improve diabetes self-management and prevent diabetes in at-risk family members based on the findings and experiences of her two NINR studies to reduce the risk of family members developing the illness.



Anne Skelly
PhD, RN, ANP-C
Associate Professor

Dr. Anne Skelly, who is currently studying diabetes in older rural African-American women, said she first became interested in diabetes self-management as a nurse practitioner in 1976.

Programs of research:

Type 2 diabetes in African-American women; Community-based family interventions to prevent and manage diabetes

Research projects:

Principal Investigator, "Symptom Focused Diabetes Care for Older African American Women," Funded by the National Institute of Nursing Research, R01 NR08582, 2003-2007. Co-Investigators: Andrea Biddle, Dorothy Burns, John Carlson, Jennifer Leeman.

Education:

PhD, Medical Sociology, State University of New York at Buffalo, Buffalo, NY

MSN, Adult Nurse Practitioner, State University of New York at Buffalo, Buffalo, NY

BSN, State University of New York at Buffalo, Buffalo, NY



"What I became interested in as a nurse practitioner was how well some people were able to manage their diabetes and conversely how much other people seemed to struggle. I wanted to know how we could help people better manage their diabetes. The population I worked with was African-American women, and I learned about diabetes from them. They taught me about what they had to do to take care of their diabetes, and what I saw was the daily burden of diabetes."

from them. They taught me about what they had to do to take care of their diabetes, and what I saw was the daily burden of diabetes," said Skelly.

Consequently, when she entered the medical sociology doctoral program at the State University of New York at Buffalo, Skelly continued to examine the psychosocial variables that affect people's ability to manage diabetes self care—following a diet, exercising, taking medications, monitoring and performing foot care.

"My research program has been based on my early findings" she said, which were published in 1995.

Skelly joined UNC Chapel Hill SON as an assistant professor in 1995 where she

lited, a study using Caucasian, Latino and African-American men and women.

"We looked at a sample of 120 individuals between the ages of 18 and 51 who were not diagnosed with diabetes but who were at risk. We wanted to know what they knew about diabetes, what they believed about diabetes, what they thought about prevention, and in the second component of the study we used some GPS and GIS mapping techniques to help us better understand where people in that community [Siler City, NC] went for health information and whom they trusted about that information," said Skelly.

So far, she and her colleagues have published nine papers reporting findings.



Jean Goeppinger
PhD, RN, FAAN

*Professor & Director, Research
Enrichment and Apprenticeship Program*

Community-based research expert, Dr. Jean Goeppinger, aims to develop multiple disease self-management programs and make them accessible to everyone who has the potential to benefit from them.

Programs of research:

Community-based interventions, evaluations of their effectiveness and acceptability; Secondary analyses of service agency/clinical site data to answer their questions; Chronic disease; Community capacity building interventions; Culturally competent community-based interventions; Rural health; Health disparity; Participatory research approaches

Research projects:

Principal Investigator, "Mail-Delivered Arthritis Self-Management Education," Funded by the Centers for Disease Control and Prevention, 2004-2005. Stanford Principal Investigator: Kate Lorig.

Principal Investigator, "Comparing ASHC and CDSMP Outcomes in Arthritis," Funded by the Centers for Disease Control and Prevention, 2002-2005.

Education:

PhD, Sociology, Case Western Reserve University, Cleveland, OH

MA, Sociology, Case Western Reserve University, Cleveland, OH

MS, Public Health Nursing, University of Minnesota, Rochester, MN

Community-Based Research

Jean Goeppinger, PhD, RN, FAAN

Dr. Jean Goeppinger designed her first community-based intervention, "Bone Up On Arthritis," for persons with arthritis in the late 1980s. Outcomes research found the intervention very effective and Goeppinger has been universally recognized as an authority in the field of community-based participatory research ever since. The extensively published findings from four subsequent studies expand on her early successes.

During the late 1980s, other researchers methodically developed and tested two other community-based disease self-management programs for people with chronic illnesses: the Arthritis Self Help Course (ASHC) and the Chronic Disease Self-Management Program (CDSMP). They found both programs effective in improving health outcomes and lowering healthcare costs among Euro Americans and Asian Americans. However, no studies were reporting on African Americans—a population experiencing substantial health disparities.

At that time, the ASHC and CDSMP programs were not reaching African Americans. In fact, the programs were only reaching about 1.5% of people who could benefit from them. So in early 2002, Goeppinger submitted her proposal "Comparing ASHC and CDSMP Outcomes in Arthritis" to the Centers for Disease Control and Prevention (CDCP). Goeppinger's study proposed to help reduce chronic illness health disparities by making the ASHC and CDSMP pro-

grams easily available to rural African Americans in Eastern North Carolina.

Goeppinger, assisted by Field Manager Donna Harris, recruited some 500 participants, age 18 or older, who had arthritis and at least one other chronic illness. Goeppinger and Harris trained 80 community coordinators, who were chronically ill, to co-facilitate six weekly 2.5 hour ASHC and CDSMP workshops. The community coordinators also acted as mediators between participants and researchers.

Goeppinger and her team pre-tested the participants and then post-tested their responses to the programs. They found

worked with the communities," said Goeppinger. "It wasn't a matter of going in and 'delivering the goods;' it was a matter of working with the people who lived in those communities to shape the programs in ways that would be most effective for them. It was an incredible commitment, but we showed that ASHC and CDSMP were as effective with African Americans as they were with Euro-Americans and Asian Americans."

Goeppinger, who has involved nursing and public health students at graduate and undergraduate levels in her work since the 1980s, believes that working on

such participatory research programs is highly beneficial for students. "It's important for students to understand that research conducted in isolation from the persons who are being served is often times not effective. The persons we're trying to serve know best how we can reach them, and we only need to ask them and listen to their answers," said Goeppinger.

Goeppinger has already built on the

findings of the ASHC and CDSMP research by becoming principal investigator of a second CDC-funded program. Once again working with Harris, Goeppinger is developing and evaluating a new evidence-based arthritis self-management program, Arthritis, Yes I Can, which will be delivered by mail to 900 participants including African Americans, Hispanics, and Euro-Americans and Asian Americans.



Dr. Jean Goeppinger (left) with project Field Manager Donna Harris. Goeppinger and Harris recruited some 500 participants for their arthritis study.

both programs effective among this previously unreachable population, although the CDSMP was determined to be the most effective. Goeppinger concluded that the CDSMP program was a better fit for African-American adults experiencing arthritis and substantial co-morbidity.

Goeppinger said participants reacted favorably to the programs citing the many unsolicited notes written on program response questionnaires. "This helped me. It helped my family. I think you really cared about me," said one participant. "Thanks for getting out here. I could never have traveled to you in Chapel Hill," added another participant.

"We were effective because we

Uncertainties in Cancer

Merle Mishel, PhD, RN, FAAN & Barbara Germino, PhD, RN, FAAN

Dr. Merle Mishel is a recognized expert on patients' psychosocial responses to uncertainty about and management of chronic and life-threatening illnesses. She began her concentration on uncertainty at the University of Arizona in 1984 when she studied patients coping with gynecological cancer. She has advanced her research consistently since arriving in Chapel Hill in 1991 and researchers worldwide now use a standard four scale measurement—the Mishel Uncertainty in Illness Scales—to gauge parents' perceptions of uncertainty concerning ill children and adults' perceptions of uncertainty concerning their own illnesses.

In 1994, Mishel became the School of Nursing's first Kenan Professor and she began a fruitful association with Dr. Barbara Germino, Carol Ann Beerstecher-Blackwell chair of thanatology and professor at the SON. In 1986, Germino landed one of the School's first large federal grants from the National Center for Nursing Research to develop a family concerns inventory, a tool to measure family members' concerns immediately following a cancer diagnosis.

Mishel and Germino teamed up to conduct six federally funded psycho-educational intervention studies involving women either being treated for or who are survivors of breast cancer, and men with either local or advanced prostate cancer. Each successive study built on the substance and findings of its predecessors.

Findings have shown that the interventions that Mishel and Germino created have measurably helped subjects improve coping skills, decrease uncertainty, and manage events that trigger fears of cancer recurrence. In all of the studies, nurses delivered telephone counseling and provide supplementary audio and print materials to educate subjects and their families on how to manage the uncertainty arising from cancer diagnosis and treatment. Mishel and Germino have also designed interventions to be self-administered including audio CDs and printed manuals that patients can use in their homes.

All the studies have included large cohorts of subjects, and the researchers have striven continuously to include equal numbers of African-American and Caucasian patients, which as Germino pointed out, was one of the several innovations of their studies. "That was one of the areas in the literature that was really obvious when we started, that there were almost no minorities in samples in any kinds of clinical trials. It's better now than it used to be, but it's still a problem, and we've expended a tremendous amount of time and energy and learned a lot in the process about how to recruit and retain minority participants," said Germino.

Recruiting African-American participants, especially men, has historically been difficult, and keeping high percentages of participants active in a longitudinal study lasting up to 20 months is especially difficult. By trial and error, Mishel and Germino learned successful strategies—advertisements with radio stations and newspapers that target minority audiences, support of community groups, and encouraging African Americans' to take active roles on the research teams. Over the years, their strategies have proven to be effective, and as word has spread that African Americans have much to gain from participation, recruitment difficulties have greatly eased.

"While we gather data, the most important part of our research is the intervention and keeping people involved with the intervention. We've designed all our interventions with our sample participants in mind so that they're acceptable to individuals from diverse backgrounds," said Mishel.

"We're now studying treatment decision making by men immediately after diagnosis for prostate cancer. From interviews in the two other prostate-cancer studies, we learned that men with current cancer said that if they had it to do over again they would make a different decision, that they got into treatment before they really knew what the treatment options were. So we're trying to influence the decision making, not in terms of deciding on a specific treatment but in terms of helping men become better informed and more educated about avail-

able treatment choices," said Mishel.

Previous studies of breast cancer survivors have involved older patients. Germino explained how associated findings are fashioning the design for a future study, the first ever to address younger women who are short-term breast-cancer survivors: "This time we'll focus on women under 50 who have a whole set of different problems from the older women that we've studied, things that have to do with fertility, childbearing, sexuality, body image, relationships, things like that were not big issues for older women. It applies the same format of the intervention that we used in other survivor studies with older women."

Who will profit in the future from the materials the team has and will produce? Patients. Mishel and Germino plan to give the CDs and manuals to an organization capable of distributing them on a mass scale.

Nursing students are already profiting from Mishel's and Germino's research by learning research first hand. "Students really learn how to do an intervention study, and some of them use our data for their own dissertations," said Mishel.

"Students sit around the table on a weekly basis with the team and talk about the development of the manuscript, how it will be focused, what some of the issues will be, looking at the feedback that we get when it's been reviewed and we have changes to make. So they're part of that whole process, which will be very helpful when they're on their own," said Germino.



Merle Mishel (left)
PhD, RN, FAAN

Kenan Professor of Nursing

Barbara Germino (right)
PhD, RN, FAAN

*Carol Ann Beerstecher-Blackwell
Chair of Thanatology*

Programs of research (Mishel):

Middle range theories; Theory of uncertainty in illness; Uncertainty in illness scales; Uncertainty management interventions with cancer patients; Uncertainty in chronic illness, Theory-based interventions; Theory-based research; Experimental designs; Psychosocial theories in acute and chronic illness; Behavioral interventions; Psycho-educational interventions for patients with chronic illness

Programs of research (Germino):

Psychosocial responses to cancer—individual and family; Death and dying—adults and families; Chronic illness—psychosocial aspects; Quality of life—research issues; Life-threatening illness—psychosocial responses; Intervention for management of responses to cancer and cancer treatment

Research projects:

"Decision Making Under Uncertainty in Prostate Cancer" Funded by the National Institute of Nursing Research, National Institutes of Health, ROI NR008144, 2002-2006. Principal Investigator: Merle Mishel. Co-Principal Investigator: Barbara Germino. Co-Investigators: Linda Beeber, Claudia Gollop, Jim Mohler.

"Managing Uncertainty in Older Breast Cancer Survivors," Funded by the National Cancer Institute, National Institutes of Health, ROI CA078955, 1999-2005. Principal Investigator: Merle Mishel, Co-Principal Investigator: Barbara Germino. Co-Investigators: Michael Belyea, Iris Carlton-LaNey, Karen Gil.

Education (Mishel):

PhD, Social Psychology, Claremont Graduate School, Claremont, CA

MA, Psychology, Claremont Graduate School, Claremont, CA

MS, Psychiatric Nursing, University of California at Los Angeles, Los Angeles, CA

BSN, Boston University, Boston, MA

Education (Germino):

PhD, Nursing Science, University of Washington, Seattle, WA

MSN, Duke University, Durham, NC

BSN, Duke University, Durham, NC



Pamela Johnson Rowsey
PhD, RN

Associate Professor

Dr. Pamela Johnson Rowsey, SON associate professor and nurse researcher, established a notable research program concentrating on the study of thermoregulation and fever using a rat model.

Programs of research:

Neuroendocrine and immunopeptide regulation of body temperature; Cytokines, exercise, injury and illness; Organophosphate insecticide-induced changes in core temperature; Chemical vulnerability and the Gulf-War syndromes; Inflammatory (cytokines) and physiological responses (temperature, BP, heart rate) in a rat model when exposed to chemical agents (toluene, benzene, chlorpyrifos) via inhalation and oral routes; Inflammation and chronic disease

Research projects:

Principal Investigator, "Beneficial Effects of Exercise on Health and Disease," Funded by the National Institute of Nursing Research, National Institutes of Health, ROI NR04920, 1999-2005.

Education:

Postdoctoral, Neurobehavior, University of Michigan, Ann Arbor, Michigan

Postdoctoral, Physiology, University of Michigan, Ann Arbor, MI

PhD, Kinesiology, University of Michigan Ann Arbor, MI

MS, Mental Health Nursing, University of Southern Mississippi, Hattiesburg, MS

BSN, Mississippi University for Women, Columbus, MS

AS, Nursing, Pearl River Community College, Poplarville, MS

Thermoregulation and Fever

Pamela Johnson Rowsey, PhD, RN

Dr. Pamela Johnson Rowsey, SON associate professor and nurse researcher, established a research program that has notably distinguished her tenure at the School of Nursing, where since 1996 she has concentrated on the study of thermoregulation and fever using a rat model.

As an undergraduate, Rowsey conducted a small clinical study, which she describes as "actually more of a managerial study, looking at different leadership styles of nurse managers in a small hospital in rural Mississippi." That study piqued her interest, not in leadership styles but in the research process. For her thesis project as a master's student, Rowsey, stimulated by her work as a rehabilitation nurse, chose to research the complex subject of sexual preference among spinal cord injury patients. "I can say from each level that my interest was piqued a little bit more," she said. "I sort of got my appetite whetted as an undergraduate student, and as a master's student I developed an even greater craving for the whole research process."

After earning her master's, Rowsey served in the U.S. Army Reserve Nurse Corps from 1981-1992, rising to the rank of major before her resignation, while simultaneously working as an Assistant Professor at The University of Michigan School of Nursing.

Then during her last years as an Army nurse officer and as a doctoral student at the University of Michigan, she became a dedicated bench scientist.

Rowsey's dissertation research concentrated on different cytokines and whether or not they are responsible for exercise-induced core temperature. Specifically, she studied tumor necrosis factor, prostaglandin, and corticotrophin releasing factor. The co-chairs of her dissertation committee were Dr. Matthew Kluger, Research Physiologist, whom Rowsey describes as "a sort of fever guru in his research," and Dr. Katarina Borer, Exercise Physiologist, who was using hamsters in her research.

Rowsey worked closely with Borer; therefore, Rowsey used hamsters as well for her research, which created some

problems. Researchers had already validated the responses of rats to various cytokine reagents but not the reactions of hamsters. Consequently, Rowsey had to validate numerous reactions by hamsters before she could begin her essential experiments. But fortune smiled when Borer took a year's sabbatical and Kluger agreed to oversee Rowsey's dissertation research on one condition—that she switch from hamsters to rats.

"So I was spending a lot of time with validations, I mean a whole lot of time. When I switched to rats, I already knew the response of tumor necrosis factor and other reagents in rats, so I didn't have to go back and do all that. My research took off and I was able to move forward, and by the time Dr. Borer returned from her sabbatical, I was almost finished with my dissertation," said Rowsey who also managed to create the chronic exercise model she still uses today to measure the effects of exercise on rats exposed to toxins and harmful bacteria.

"For the last nine years I've used that chronic exercise model to examine the beneficial effects of exercise when animals are exposed to bacterial infections and organophosphate pesticides. What I've found is that after animals are exercise trained or conditioned, they respond differently when they're exposed to different toxins or bacterial infections. In other words, the trained animals do better," said Rowsey.

"I don't know that we can extrapolate this to humans at this point," she continued, "but it does support the idea that exercise provides some type of protective effect when animals are exposed to toxins. At least in an animal it appears that they don't become as sick when they're exposed to different toxins as sedentary animals do," said Rowsey.

After receiving her PhD in 1993, Rowsey remained at the University of Michigan for two stints as a postdoctoral fellow, first in physiology and then in neurobehavior. In 1996, she joined the UNC Chapel Hill School of Nursing faculty and also became visiting research scientist with the Environmental Protection Agency (EPA) in Research Triangle Park, NC, where she studiously built on her research.

Rowsey has been the principal investigator of six funded studies, including a five-year investigation of the "Beneficial Effects of Exercise on Health and Disease" funded by the National Institute of Nursing Research, National Institutes of Health.

A shift in Rowsey's interest corresponds to a current refocusing by the EPA. "Right now we're addressing how toxicant exposure can increase susceptibility to cardiovascular disease. So in other words, we are developing approaches using both physiological and biochemical endpoints. By biochemical, I mean immunological markers of inflammation. Again we're back to cytokines, like Interleukin-1, Interleukin-6, and C-reactive protein because they merge as critical indicators for cardiovascular disease. So we want to look at how these markers of inflammation may be related to the risk of cardiovascular disease when people are exposed to certain toxins. My research is becoming more focused because I'm moving toward a clinical endpoint," said Rowsey.

Rowsey wishes more students were eager to do research involving animals. "I want my students and my colleagues to understand that research using animals has contributed to almost every single one of the major medical advances of the last century. These include the development of penicillin, insulin, polio vaccines, cardiac procedures and kidney dialysis. More recently, drugs for the treatment of cancers, HIV/AIDS, asthma and depression have been developed using animal models. In other words, in order to understand the mechanisms behind chronic illness or disease, I believe it is necessary to first start with an animal model," said Rowsey who believes that the future holds promise for spurring that interest.

Rowsey noted that she and Dr. Barbara Carlson, SON assistant professor and an expert in sleep disorders, are planning a collaboration whereby they will create a biobehavioral model allowing them "to look at the clinical endpoint and the animal endpoint to bring those two together—to link the bench with clinical research."

The Social Welfare Implications of Nursing

Janna Dieckmann, PhD, RN

"I'm interested in the social welfare implications of nursing care: Who gets what? How do we organize it? What services do we have? Why? And for me, looking at the chronically ill who are such a vulnerable population provides a wonderful way for looking at how people get help and what help they get," said Dr. Janna Dieckmann, SON assistant professor and social welfare researcher.

"One of the ways we understand what's going on in the United States today is to compare what we do to, say, Canada or Great Britain, to compare us to similar systems in the same time line," Dieckmann explained. "But another way is to compare what we're doing today with what we used to do. This type of research keeps more variables consistent accounting for our cultural assumptions and the ways we provide care."

Dieckmann's interest emerged during high school, and even more during the early 1970s when she was a social worker for the Portage County Welfare Department in Ravenna, Ohio. Seeing children and families for whom preventive care was not being practiced adequately inspired Dieckmann to become a public health nurse. After earning her BSN from Case Western Reserve University in 1974, her position as a visiting nurse in Cleveland confirmed both her prior opinion and her commitment to prevention and care of vulnerable populations.

Dieckmann earned her MSN in community health nursing from the University of Pennsylvania in 1984. She began teaching at Penn full time in 1985 when she also decided to enter the PhD program to study family caregiving. While a doctoral student, she held positions as a lecturer at Penn, La Salle and other schools of nursing. Dieckmann earned her PhD from Penn in 1997.

At Penn, Dieckmann first considered using a qualitative approach in learning how to support and provide interventions for family caregivers, but found that approach lacking. "A qualitative approach didn't take into account all these other factors that

the historical research included," said Dieckmann. For her dissertation, "Caring for the Chronically Ill: Philadelphia, 1945-1965" (published under the same title by Garland Publishing in 1999), Dieckmann researched local and national archives for information on community service and public policy between 1945-1965 regarding the care of the chronically ill in nursing homes, boarding homes and in their own homes.

Dieckmann said she loved the research process and, after joining the UNC School of Nursing faculty in 1999, she received a Faculty Research Opportunity Grant that allowed her to conduct archival and library research.

Two years later, Dieckmann received a grant to study care between 1945 and 1970 in New York State. Then serendipity tapped Dieckmann on the shoulder and induced her to look back to an even earlier time period, prior to 1945. An assistant director of health in New York during the 1930s and 1940s retired and stored his records in a chicken coop. His son discovered them after his father's death and donated them to the New York State Archives. Reading the records alerted Dieckmann to the influence that New Deal initiatives had on nursing-practice policies in the immediate post-World War II era.

"I ended up finding material from the 1930s about public health nursing programs that were part of the Depression-era New Deal programs. I got so excited about the records because they reported so much about nurses and nursing and how nurses developed new services," said Dieckmann.

Currently, Dieckmann is working on an article entitled "Double Relief," the "Double" referring to a federal program that hires out-of-work nurses to care for out-of-work families. The article will concentrate on two bases of effort, the Temporary Emergency Relief Administration in New York State and the national New Deal programs. The article will also look at how health care providers built on the public-health nursing initiatives that originated earlier in the century during the progressive

era and the 1921 Sheppard-Towner Program, to expand maternal-child and bedside nursing programs.

"By looking at history, we can influence change in the present," said Dieckmann, whose ultimate purpose is to increase funding for home services, which is now threatened in scope by increasing costs of institutional care and cash-poor state budgets. She recalled reading a 1950s journal article entitled "Nursing Homes: Are They Homes? Is There Nursing?" Dieckmann thinks the implications of the title remain true and that we, as a nation, have not succeeded in creating facilities that truly provide care for the aged and chronically ill.

Dieckmann hopes that her work will prompt and give direction to nursing faculty and students, practicing nurses, and nursing organizations to maintain the chronically ill at home rather than in institutions with care that is more skilled and professional.



Janna Dieckmann
PhD, RN

Assistant Professor

Programs of research:

History and public policy for care for the chronically ill in the twentieth century including home care, visiting nurse practice, and systems of long-term care, chronic care and elder care

Research projects:

Principal Investigator, "Nursing Care for the Chronically Ill: An Oral History of Nurses and Nursing Assistants, 1950-1970," Funded by the Center for Research on Chronic Illness, School of Nursing, University of North Carolina at Chapel Hill; National Institute of Nursing Research, National Institutes of Health, 2002-2004. Co-Investigators: Jacquelyn Hall, Julia Cherry Spruill and Joyce Rasin.

Education:

PhD, University of Pennsylvania, Philadelphia, PA

MSN, Community Health Nursing, University of Pennsylvania, Philadelphia, PA

BSN, Case Western Reserve University, Cleveland, OH

BA, Sociology, College of Wooster, Wooster, OH





Yvonne Eaves

PhD, RN

Research Assistant Professor

Dr. Yvonne Eaves is currently testing an intervention she developed to assist rural African Americans in recognizing transitional periods in the health of chronically ill family members and in planning for in-home and out-of-home long-term care.

Programs of Research:

Caregiving in rural African-American families for older adult relatives; Long-term care; Qualitative research methods, particularly grounded theory, narrative inquiry

Research projects:

Principal Investigator, "A Caregiving Intervention for Rural African Americans," Mentored Research Scientist Career Development Award (K01). National Institute on Aging, National Institutes of Health, KO1 AG22474, 2005-2010.

Education:

PhD, Nursing, University of Michigan, Ann Arbor, MI

MS, Community Health Nursing, Northern Illinois University, DeKalb, IL

BS, Nursing, Saint Xavier College, Chicago, IL

Diploma, Nursing, Saint Francis Hospital School of Nursing, Peoria, IL

Caregiving of Rural African Americans

Yvonne Eaves, PhD, RN

In the 1980s, Dr. Yvonne Eaves was a practicing nursing in Illinois and Michigan. She traces her current research interest in caregiving of rural African Americans to that period.

"What really got me started with caregiving research was being a home-care visiting nurse. I had spent many years working in hospitals in critical care units. One Sunday night after I got off from a weekend of two 12-hour shifts taking care of a very sick man, I just thought to myself, 'I never had a chance to give him a shave, in two twelve-hour shifts.' So I went into home-health nursing and worked for a visiting nurse association during the beginning of my doctoral program at Michigan," said Eaves.

Eaves' primary duty as a home-care nurse was to care for older adults, but because third-party payers and Medicare had limits on terms of home-care, she found herself spending about as much time teaching family members how to care for their loved ones as she did changing dressings and administering insulin and IV medications. In the process, Eaves gained keen insight into the particular problems African-American families encounter and, consequently, selected stroke as her dissertation topic because it disproportionately affected African Americans.

Eaves began her research on caregiving of African-American families with elderly stroke survivors at the University of Michigan. She had intended to gather data in Detroit, but when she came to Chapel Hill in 1994 as a visiting instructor, she shifted her concentration to rural African-American families. Eaves obtained a grant from the National Institute on Aging (NIA), National Institutes of Health (NIH), and continued conducting her research in four rural counties in North Carolina.

Eaves employed a qualitative grounded-theory design for her research, which identified stages in a process and strategies people employ to get through the stages. Analysis of data from interviews and observations resulted in a substantive theory of "rural African-American caregiving for elderly stroke survivors."

In the process of her research, Eaves developed new knowledge about African-American family networks and how families provide care for their loved ones. For example, Eaves discovered that while many caregivers were dissatisfied with the level of assistance they received from other family members, they were reluctant to complain about it. However, those family members were willing to express their displeasure to her.

Eaves further realized that the reluctance of African Americans to place relatives in nursing homes was not so much ethnically based, as suggested in popular theory, as it was economically based. Large percentages of African Americans, especially rural dwellers, occupied a lower socioeconomic status and nursing homes in general were unwilling to accept Medicaid patients.

While she was completing her dissertation, Eaves received a two-year fellowship from the National Institute of Nursing Research (NINR), NIH, through the SON Center for Research on Chronic Illness to study how rural community hospital emergency departments react to stroke symptoms. In 1999, Eaves received a Minority Investigator Supplement grant from NINR, to conduct an extended study of caregiving transitions and long-term care decision making by rural African-American families, the theme that continues to dominate her research.

The NINR-funded Minority Investigator Supplement provided support for a 3-year study of decision making for family care giving transitions that result from the changing health status of a chronically ill relative.

A key discovery was that African Americans did not follow a selective path but typically had decisions made for them by physicians or social work-

ers who told them when their relatives were too sick for home care.

In March 2005, Eaves received a Mentored Research Scientist Career Development Award (K01) from the NIA and began the first phase of a five-year training-investigation regimen "A Caregiving Intervention for Rural African Americans".

In the first phase of her study, Eaves is using ethnography, that is, collecting data from a small number of subjects in their usual environment, to fill gaps remaining in her decision-making research and to obtain information to formulate interventions that assist families in making informed long-term decisions. The interventions will allow affected relatives to be part of the decision-making process while they are still mentally and physically vigorous. In short, Eaves wants to create a win-win situation for families and the agencies with which they must deal.

Eaves has been highly active in guiding students in research projects, especially undergraduates in the SON Honors Program. She has directed six students in recent years, including a student in 2004-2005 who conducted a secondary analysis of Eaves' decision-making data, data that will, in years to come, accumulate richly and rapidly.

Embarrassment Vanquished

Incontinence in Older Adults

Mary H. Palmer, PhD, RNC, FAAN

Mary H. Palmer, PhD, RNC, FAAN, purposefully reached across a vacuum to touch a forbidden subject and give it life. The well known gerontology expert began concentrating on incontinence in the early 1980s as a master's student at the University of Maryland at Baltimore. She wrote a seminar paper on incontinence in older adults that she expanded into the 1985 book *Urinary Incontinence*. Even though *The American Journal of Nursing* named it a book of the year, Palmer's beloved grandmother would not allow it in her house on the grounds that "Nice people don't talk about such things."

That same year Palmer entered the doctoral program at Johns Hopkins University School of Hygiene and Public Health with the intention, "of taking incontinence from the institution to public health," she said.

At the time, Palmer's dissertation chair was researching depression in nursing home residents and encouraged her to conduct a secondary data analysis of changes of continence status in nursing home residents. She did. It was the first



Dr. Mary H. Palmer was named the SON's first Helen Watkins and Thomas Leonard Umphlet distinguished professor in aging in 2002. She is recognized as a leader in gerontology, with nearly 20 years of research and policy expertise in the management of urinary incontinence in older populations. Palmer (right) seen here with Helen Umphlet (left).

American study directed at incontinence incidence, new cases, and spontaneous remission in nursing home residents during their first year of admission.

Then, with what Palmer refers to as either "true guts or the ignorance of a naïve doctoral student," she called scientists at the Gerontology Research Center at the National Institute on Aging at the National Institutes of Health and asked whether researchers wanted help with a study of incontinence. Palmer's mentor told her, "I want you to do your own research and I want you to have an abstract and a publication from it."

"And that's the model I have used since with doctoral students and even master's students who come my way. I want them to get a product out of whatever they do with me," said Palmer.

After earning her PhD in 1990, Palmer spent six-and-a-half years researching incontinence at the Gerontology Research Center, recalling that even discussion about

HIV/AIDS became acceptable before discussion about incontinence.

Palmer revised her book and reissued it in 1996 as *Urinary Continence: Assessment and Promotion*. She has continued her ground-breaking research and published profusely ever since.

As the principal investigator of studies looking at the impact of work environments on women's incontinence, Palmer and her associates have compared women in academic settings to other female workers. Their findings on continence status have been significant. For example, 21% of women who participated in the studies that work in academic settings reported at least monthly incontinence. This compared to 29% of production-line workers who participated in the study. Women in both groups tended not to report their conditions to physicians, in part because they did not realize that interventions were available.

In other research, Palmer works with Dr. Mona Baumgarten at the University of Maryland on the study "Locus of Care and Pressure Ulcers," where she continues to collect data from hip-fracture patients in eight hospitals in Maryland and Washington, DC. "Her interest is in looking at the prevalence and incidence of pressure ulcers," Palmer says, "but I've added questions about prevalence and incidence of urinary incontinence and urinary tract infections that will generate data that can lead to treatment of pressure ulcers and incontinence."

Palmer is also principal investigator in the beginning stages of a project funded by Pfizer, Inc., looking at incontinence and overactive bladders and how they relate to chronic heart failure in patients. In a familiar role, Palmer will be mentoring Dr. Sonja Hardin, a post-doctoral fellow in the SON, in an exploratory study of adherence to chronic-heart-failure therapy by patients with and without urinary incontinence and overactive bladders.



Mary H. Palmer
PhD, RNC, FAAN

Umphlet Distinguished Professor in Aging
Editor, *Journal of Wound, Ostomy and Continence Nursing*

Dr. Mary H. Palmer pursued her research career on continence with the intention "of taking incontinence from the institution to public health."

Programs of research:

Urinary continence in adults; Aging; Long-term care; Older adults in acute care; Gerontology/Geriatrics; Health promotion

Research projects:

Principal Investigator, "Urinary incontinence and overactive bladder in chronic heart failure patients: An exploratory study," Pfizer, Inc., 2005. Co-Investigator: Sonja Hardin.

Principal Investigator, "Improving Nursing Care for Acutely Ill Elders," Health Resources and Services Administration, 1 D62HP01913-01-00, 2003-2006.

Education:

PhD, Johns Hopkins University, Baltimore, MD

MS, University of Maryland, Baltimore, MD

MFA, Creative Writing, Goddard College, Plainfield, VT

BSN, University of Maryland, Baltimore, MD

"It's estimated that 20 million Americans are affected by urinary incontinence or some varying degrees of lack of bladder control, making continence one of the largest public health concerns in the United States," said Palmer.



Treating Urinary Incontinence

Jean Kincade, PhD, RN & Molly Dougherty, PhD, RN, ARNP, FAAN

Jean Kincade (left)
PhD, RN
Research Associate Professor

Dr. Jean Kincade, research associate professor at UNC Program on Aging and the SON, is interested in expanding the research she's working on with Dr. Molly Dougherty, introducing urinary incontinence (UI) interventions to homes of women unable to visit a clinic.

Molly Dougherty, (right)
PhD, RN, ARNP, FAAN
Prof. of Nursing & Editor, Nursing Research

Dr. Molly Dougherty, SON professor and recognized expert in urinary continence, began her research career by studying child-bearing in rural Black communities before moving to funded research that created a nursing model to manage UI in older rural women.

Programs of research (Kincade):

Management of disability by older adults; Urinary incontinence in older adults; Measurement of physical functioning in older adults; Questionnaire design

Programs of research (Dougherty):

Women's health; Community-based nursing interventions; Urinary incontinence; Pelvic muscle function; Cross cultural nursing

Research projects:

"Efficacy of Biofeedback to Treat Urinary Incontinence in Women," National Institute of Nursing Research, R01 NR05071, 2002-2005. Principal Investigator: Jean Kincade, Co-Principal Investigator: Molly Dougherty. Co-Investigators: John Carlson, Ellen Wells, Jan Busby-Whitehead.

"Effectiveness of Self-Monitoring to Treat UI in Women," National Institute of Nursing Research, R01 NR05071, 2002-2004. Principal Investigator: Jean Kincade. Co-Principal Investigator: Molly Dougherty

Education (Kincade):

PhD, Sociology, Brown University, Providence, RI

MS, Nursing, University of Florida, Gainesville, FL

BSN, University of Saskatchewan, Saskatchewan, Canada

Education (Dougherty):

PhD, Anthropology, University of Florida, Gainesville, FL

MN, University of Florida, Gainesville, FL

BSN, University of Florida, Gainesville, FL

Before teaming up with Dr. Molly Dougherty in 2000, Dr. Jean Kincade, research associate professor at the UNC Program on Aging and the SON, participated in a number of major studies looking at the functioning and medical management of older people including self-care among older adults, arthritis care, nursing home care and geriatric education.

Dougherty, an SON professor and recognized expert in urinary continence, began her research career by studying child-bearing in rural Black communities before moving on to funded research that created a nursing model to manage urinary incontinences (UI) in older rural women.

Kincade and Dougherty quickly realized they were a natural team and decided to draw on their experiences to expand into a new area of continence research. They recognized that while a body of knowledge existed on pelvic floor exercise and bladder training, none existed on how biofeedback could contribute to the effectiveness of those methods.

They submitted a proposal to the National Institute of Nursing Research (NINR), National Institutes of Health, to investigate the efficacy of biofeedback in treating urinary incontinence in women.

"The feedback we were getting from NINR on our proposal made it clear that they were interested in expanding our study to investigate how lifestyle modifications, things like maintaining adequate fluid intake and maintaining a normal voiding interval, would affect urinary incontinence," said Dougherty.

After some modifications and a supplemental proposal to the NINR, Kincade and Dougherty received \$3.1 million in funding to conduct two studies simultaneously: "Effectiveness of Self-Monitoring to Treat UI in Women," and "Efficacy of Biofeedback to Treat Urinary Incontinence of Women."

"Effectiveness of Self-Monitoring to Treat UI in Women" aimed to assess the effectiveness of self-monitoring of women with UI by comparing their urine loss, UI episodes, and quality of life, with a control group of women who were not using self-monitoring as treatment.

For "Efficacy of Biofeedback to Treat Urinary Incontinence of Women," Kincade and Dougherty collaborated with Dr. Jan Busby-Whitehead, director of UNC Continence Clinic and chair of the Chapel Hill, NC, based Urinary Incontinence Research and Practice Group. The team looked at women who did not respond to self-monitoring treatment to compare the efficacy of pelvic floor muscle exercises, which are strongly recommended for women in treating UI, augmented with biofeedback, to pelvic floor muscle exercises without biofeedback.

Monitoring biofeedback involved taking signals from a body function, enhancing those signals electronically, and showing the signals in real time to participants of the study so they could see, for example, what was working and what was not working during pelvic floor muscle exercises.

Both studies targeted women age 18 and older who live in Wake and surrounding counties in North Carolina. During the course of the studies, the team expanded their sites to include small clinics in Raleigh, Rocky Mount and North Durham.

Each clinic was equipped with biofeedback instruments, examination tables and everything necessary to conduct physical examinations. Study participants were trained in using the biofeedback instruments at home. They were asked to keep three-day dairies in which they record fluid intake, voidings and leaks.

Kincade and Dougherty collected

pertinent data from the diaries, and pad tests which measured urine loss.

While the research team is still analyzing results, a central question Kincade and Dougherty are examining is whether pelvic floor muscle exercises with biofeedback, offered in a consistent manner, are more effective in treating UI than pelvic floor muscle exercises without biofeedback. The researchers hope to finalize results in the near future and begin publishing their findings.

Kincade and Dougherty, who previously concentrated on stress incontinence which involves the involuntary loss of urine from physical activity such as exercise or a sneeze, are interested in the possibility of expanding their research by introducing their UI interventions into the homes of women who are unable to visit a clinic. They are also interested in expanding their research to include urge incontinence, which involves an uncontrollable need to urinate immediately.

Treating UI with Computer-Based Systems

Alice R. Boyington, PhD, RN

Like many researchers who have conducted large-scale projects, Dr. Alice “Dee Dee” R. Boyington found her niche while completing research for her dissertation. “I was looking at urinary incontinence in women and my findings suggested that pelvic muscle exercise may be beneficial for aging women regardless of whether or not they had had clinical signs of urinary incontinence. It highlighted the need to further explore preventive interventions,” said Boyington.

While finishing her dissertation at the University of Florida, Boyington joined UNC Chapel Hill School of Nursing as a faculty member and the project manager for Dr. Molly Dougherty, an SON professor and renowned incontinence expert, who was conducting research aimed at constructing a nursing model for the care of older rural women with urinary incontinence. After receiving her PhD in

1997, Boyington continued her research program focusing on urinary incontinence in women by “conducting women’s health research based theoretically in a classic model of preventive medicine.”

Dougherty sponsored Boyington’s successful application for a Mentored Scientist Development Award from the National Institute of Nursing Research (NINR), National Institutes of Health in 1999. The grant funded a four-year investigation in which Boyington developed and tested an interactive computer-based system (CBS) to help older women learn self-care techniques to treat symptoms of urinary incontinence and other bladder-control problems.

“My preliminary work revealed a trend toward symptom improvement,” said Boyington. “It was an indication that the CBS could provide women with useful information and that older women were willing to receive health information from such a system. I continued a randomized trial of the CBS with community-dwelling women aged 50 and older with symptoms of urgency, frequency, nocturia and/or involuntary urine loss. The study was novel because it focused on women with symptoms other than urinary incontinence, a first step in investigating primary prevention.”

Her results were mixed but encouraging. “Although the treatment and control groups were not significantly different on symptom distress and quality of life measures, a favorable effect of the CBS intervention was found for the treatment group,” said Boyington. “As a result, the research provided a foundation for future investigations of prevention of continence problems and the use of information technology to deliver care. Findings showed that older women may benefit from interventions delivered via computer technology with a browser-based user interface.”

In conjunction with the NINR project, Boyington simultaneously completed several smaller studies funded by the UNC Research Council and the School of Nursing. The grants allowed her to engage in activities that expanded on

and informed her basic research.

Working with Dougherty and a doctoral student, Boyington examined Web sites devoted to providing information on continence health in preparation of expanding her CBS into Web-based intervention after learning that no substantial research existed on the development and efficacy of Web-based incontinence interventions.

Boyington and Dougherty also developed the “Teachers Bladder Survey,” to gather information on lower urinary tract symptoms (LUTS) from school teachers, an understudied at-risk group whose schedule-demanded fluid restriction have led them to name incontinence the “teachers’ disease.” From those efforts she learned that researchers have largely ignored factors in the work environment associated with LUTS in women and that no substantial research exists on the development and efficacy of Web-based incontinence interventions.

Currently, Boyington is working to adapt the “Teachers Bladder Survey” to the Web for two purposes: to identify LUTS prevalence among teachers, and to deliver an intervention via the Web to teachers. “I believe the Web offers an opportunity to add to the knowledge of LUTS, to survey a specific population efficiently and ultimately to influence workplace policies,” said Boyington.

SON researchers strive to involve students, especially doctoral students, in all aspects of research. This includes everything from collecting data, to attending decision-making meetings, to presenting at conferences and preparing manuscripts for publication. Students benefit from the experiences and often use their faculty mentors’ research data in conducting their own dissertations and other research. One SON doctoral student from Taiwan, with whom Dougherty and Boyington worked, modified the “Teachers Bladder Survey” for use in her home country, demonstrating the potential of the research to promote international collaboration.



Alice R. Boyington
PhD, RN

Associate Professor

Dr. Alice R. Boyington, SON researcher and associate professor, believes that “the Web offers an opportunity to add to the knowledge of lower urinary track symptoms, to survey a specific population efficiently and ultimately to influence workplace policies.”

Programs of research:

Lower urinary tract symptoms in women; Knowledge-based systems; Consumer Health Informatics; Development and evaluation of web-based interventions

Research projects:

Principal Investigator, “A Knowledge-Based System for Continence,” Funded by the National Institute of Nursing Research, National Institutes of Health, 1999-2002. Co-Principal Investigator: Molly Dougherty

Education:

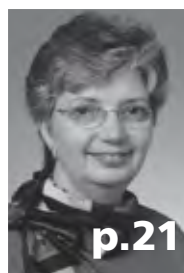
PhD, Nursing, University of Florida, Gainesville, FL

MSN, Nursing Administration, University of Florida, Gainesville, FL

BSN, University of South Florida, Gainesville, FL

“...the Web offers an opportunity to add to the knowledge of lower urinary track symptoms, to survey a specific population efficiently and ultimately to influence workplace policies.”

FOCUS *on* Lifespan



The human body is a fine instrument. Its delicate and complex systems allow it to do any number of activities like moving, feeling, breathing and eating. Over the human lifespan, from early development through death, our bodies' systems can face a variety of unique challenges.

In the U.S., life expectancy has reached an all-time high according to the National Center for Health Statistics. And while we are living longer, researchers continue to question, are we living healthier? A seemingly endless list of illnesses and conditions plague our health, disrupting our bodies' delicate balance.

Researchers at the SON are investigating the development of humans and their health across the lifespan. They are further examining how those developments affect professional nursing practice, government and social policy.

Read on to find out how five SON researchers, Drs. Margaret S. Miles, Suzanne Thoyre and Susan H. Brunssen who study our nation's young, and Drs.

Barbara Waag Carlson and Virginia Neelon, who study our nation's old, are exploring changes in human development over the lifespan.

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Leaving a Legacy in Pediatric Nursing Research

Margaret S. Miles, PhD, RN, FAAN

Since her arrival at the SON in 1984, Dr. Margaret S. Miles has been the principal or co-principal investigator of ten research projects totaling more than \$5.6 million in funding.

She has been co-investigator on five additional studies, the director of a collaborative research center, author or co-author of 21 book chapters and more than 70 articles in professional journals.

Miles has been a grant-application peer reviewer for the National Institutes of Health (NIH) and the Department of Health and Human Services for 11 years, a committee chair for six doctoral students and 39 master's students, a sponsor for three doctoral students who received National Research Service Awards, and—among a catalogue of additional accomplishments—the recipient of numerous awards and recognitions.

Appreciated by fellow faculty and by students as much for her consistent congeniality and mentoring as for her expertise in fields such as parental grief and stress, preterm and medically fragile infants, African-American mothers with HIV, and developmental science, Miles prefers to view her career by looking at themes of research rather than milestone projects. “Studies are funded, have timelines and end, but scholarship goes on and on. You’re never finished. You’re always working on these issues,” she said.

Miles’s early work with “Parental Stressors in the Neonatal Intensive care Unit” was one of the School of Nursing’s first projects funded by a federal agency, the Division of Nursing at the Health Resources and Services Administration.

“When I came here, Dr. Sandra Funk [SON associate dean for research] joined my team, and we developed a questionnaire to assess the sources of stress for parents of preterm infants hospitalized in a neonatal intensive care unit (NICU). That tool, the Parental Stressor Scale: NICU, is now being used by researchers across the world,” said Miles.

The findings from Miles’s early study were consistent with results of previous studies she conducted with parents of children hospitalized in pediatric inten-

sive care units in the Midwest. Findings showed that the major sources of the stress of parents were the alterations in their parental roles and the behavior and appearances of their sick children.

Within a year, Miles joined forces with a new junior faculty member, Dr. Diane Holditch-Davis. Miles and Holditch-Davis shifted their research focus to maternal distress during hospitalization and parenting after discharge. A longitudinal study of depressive symptoms in mothers of preterm infants revealed that parental role stress was related to depressive symptoms even after discharge. As a demonstration of the continuity as well as the expansion of their collaboration, Miles and Holditch-Davis are now conducting a nursing support intervention for rural African-American mothers of preterm infants in a project funded by the National Institute of Nursing Research (NINR), NIH.

In the late 1980s, Miles began a careful observation of parents of medically fragile infants who had serious chronic health problems, were dependent on technology, and spent months and sometimes years in the hospital. Building on the results of this pilot study, Miles along with Holditch-Davis, received major funding from NINR in 1992 for a five-year longitudinal study exploring the process of parental role attainment and the factors that influenced the process as well as the long-term outcomes for mother-infant relationships at 18 months of infant age. Numerous doctoral students worked with the research team and several have used the archives for their dissertations and published papers based on the data.

Responding to a request by physicians with the Pediatric Infectious Diseases Division at Duke University, Miles and Holditch-Davis applied for and received funding from the National Institute of Mental Health (NIMH), NIH, for a longitudinal study of parental caregiving of infants seropositive for HIV. It was one of the first studies to focus on families coping with HIV infection.

While the number of infants actually infected with HIV was small due

to the discovery of AZT treatment, the study filled a void by investigating developmental outcomes of at-risk children residing in these families. In addition, interviews with the HIV+ mothers turned the attention of the research team to the needs of these women, many of whom were not caring for their own health.

Thus, Miles and her team developed and tested a self-care intervention for African-American mothers with HIV with funding from the NINR. She worked with postdoctoral student, Dr. Maithe Enriquez, to adapt the intervention to a small group approach with input from a group of women with HIV in Kansas City. Miles is now a collaborating investigator for a grant submitted by Enriquez to the NINR to test the intervention with a larger sample.

A founding member of the UNC-based Center for Developmental Science (CDS), established in 1985, Miles has promulgated the importance of bringing the latest theories and methods of developmental science into nursing research. She has been an ongoing member of the CDS executive committee and highly values her role as a liaison between the center, nursing faculty and students.

Miles recently retired but fortunately for nursing and the SON, she remains on the faculty as a research professor where she continues her involvement on grants, mentoring faculty and students, and writing scholarly papers. Accenting the no-man-is-an-island theme, she acknowledges that her research endeavors would not have been possible without the support of administrators and help from the Research Support Center, mentors and colleagues, co-investigators, project managers (“who are absolutely invaluable!”), the research-project staffs who “do the hard work of recruitment, data collection, interventions,” and the support of her family.



Margaret S. Miles
PhD, RN, FAAN
Professor Emerita

“Studies are funded, have timelines and end, but scholarship goes on and on. You’re never finished. You’re always working on these issues,” said Dr. Margaret S. Miles, pediatric nursing expert and SON research professor.

Miles, who recently retired, was the principal investigator on a number of pioneering studies. She is known for her investigations of grief and stress of parents of preterm or medically fragile infants

Programs of research:

Parenting infants and children with chronic or life-threatening illness; Parenting the dying child; Parents of medically fragile or preterm infants; Bereaved parents, grief theory; Women with HIV (mental and physical health, parenting, self-care)

Research project:

Co-Principal Investigator, “Nursing Support Intervention for Mothers of Prematures,” Funded by National Institute of Nursing Research, National Institutes of Health, 2001-2006. Principal Investigator: Diane Holditch-Davis. Co-Investigators: Linda Beeber, Suzanne Thoyre.

Education:

PhD, Counseling Psychology, University of Missouri-Kansas City, Kansas City, MO

MSN, Pediatric Nursing, University of Pittsburgh, Pittsburgh, PA

BSN, Nursing, Boston College, Boston, MA



Suzanne Thoyre
PhD, RN
Associate Professor

Programs of research:

Co-regulatory mechanism of feeding and growth of preterm infants; Maternal working models of feeding co-regulation; Physiologic regulation during feeding in preterm infants; Observational coding; Biobehavioral measures; Feeding issues for children with Down syndrome

Research projects:

Principal Investigator, "Contingent feeding of preterms to reduce hypoxemia," National Institute of Nursing Research, National Institutes of Health, 1 K01 NR007668, 2002-2005.

Education:

PhD, Pediatric Nursing, University of Wisconsin at Madison, Madison, WI

MS, Parent-Child Nursing, University of Wisconsin at Madison, Madison, WI

BS, Nursing, University of Wisconsin at Madison, Madison, WI

Feeding of Preterm Infants

Suzanne Thoyre, PhD, RN

Dr. Suzanne Thoyre has studied preterm infants and feeding behavior since the early 1990's.

Thoyre is focused on a Mentored Research Scientists Award (K01) from the National Institute of Nursing Research, National Institutes of Health, that studies 30 premature infants, all at risk for chronic lung disease, aimed at refining an intervention that she developed to minimize hypoxemia during bottle feeding.

"Preterm infants don't have very good control of breathing yet. We're talking about infants who aren't supposed to be eating yet; they're supposed to be in utero. So they don't have all the skills needed to do this kind of coordinated, complex activity," said Thoyre.

"Breathing and sucking are rhythms in their bodies that they need to coordinate. During sucking bursts, preterm infants may take an inadequate number of breaths or breaths of insufficient depth. If a sucking burst is too long, the infants may take in such a large bolus of fluid that it will require several swallows to clear the airway for the next breath. Breathing irregularities can deplete these infants' energy and make feeding a time of distress," said Thoyre.

A 1999 study funded by the SON's Center for Research on Chronic Illness allowed Thoyre to determine that her intervention was feasible and would be most effective if directed toward preterm infants who are at risk for chronic lung disease.

To obtain data, Thoyre devised a feeding bottle that electronically measured sucking. Originally, the bottle held a microphone to detect breathing, however during the K01 research, Thoyre learned that she could detect respiration as well as swallowing by attaching a microphone alongside the infant's neck and listening to the breathing and swallowing sounds with headphones.

Thoyre's intervention trains the feeder to recognize the nature of feeding behaviors and co-regulate them to reduce problems and to assist the baby in becoming as self-regulatory as possible during feeding. Either Thoyre or an assistant alternates feedings with nurses

for two days during the child's first or second week of oral feeding, the nurses without amplified swallowing and breathing (i.e., no microphone or headphone) and researchers with their equipment. Then, so long as the infant remains in the hospital, the researchers feed the baby at bedside two or three times per week without instruments but tracking skill development. Finally, the researchers call the mother at three months post discharge to get reports on how the infant is now feeding and how feeding fits in the family context. Thoyre and her research team then code, extract and analyze data collected both in the hospital and from the telephone interviews.

Preliminary findings indicate that infants who receive intervention feeding have higher mean, minimum and maximum oxygen saturation and a smaller range of values, fewer significant declines in oxygen from the infant's baseline, fewer number of breathing pauses longer than five seconds in duration during the first five minutes of bottle-in, and less time with indicators of fatigue than infants fed using a standard approach.

In an extension of the K01 research, Thoyre is working with Cara McComish, a UNC speech-therapist doctoral student who is interviewing an additional set of families of premature children under three years of age to learn about feeding problems post-discharge. McComish shares Thoyre's theoretical approach and is developing a dissertation that will examine the relationship of preterm infant feeding skill development with later language development.

Although Thoyre is still completing data collection, she has already published one report related to the study. In the May-June 2005 issue of *Neonatal Network*, she authored an article describing the Early Feeding Skills Assessment, "a checklist for assessing infant readiness for and tolerance of feeding and for profiling the infant's development of feeding skills."

Future plans for Thoyre include exploring the development of feeding problems post-discharge for the most vulnerable preterm infants, focusing on two transition points— stabilizing oral feeding skills within the family context

after discharge and making the transition to the family meal toward the end of the first year. In addition, Thoyre has collaborated with Dr. Marcia Van Riper, SON associate professor and genetic researcher, to explore feeding issues for families of children with Down syndrome.

"This has been a great opportunity for me to explore feeding issues in another population of children. Dr. Van Riper and I plan to take this research in the direction of a family intervention in the future," said Thoyre.



Dr. Suzanne Thoyre feeds an infant with a feeding bottle that electronically measures sucking. Originally, the bottle held a microphone to detect breathing, however during her research, Thoyre learned that she could detect respiration as well as swallowing by attaching a microphone alongside the infant's neck and listening to the breathing and swallowing sounds with headphones.

Effects of Inflammatory Proteins on the Developing Brain

Susan H. Brunssen, PhD, MSN, BSN

"Like many NICU nurses, I was bothered by the high likelihood of damage to the very fragile, developing brains of such tiny babies," said SON Assistant Professor Dr. Susan H. Brunssen who had been working with sick children as a pediatric nurse clinical specialist and manager for over a decade when she decided to go into neonatal intensive care and management. "In addition to their very early births, nursing care that was life-saving also carried the potential for harm. Neurologic outcome was, rightfully, a major concern of parents," she said.

In 1992, Brunssen became the project manager for PRAM, or "Parental Role Attainment with Medically Fragile Infants," funded by the National Institute Nursing Research (NINR), National Institutes of Health (NIH). The project was led by two of Brunssen's mentors, SON researchers Drs. Margaret S. Miles and Diane Holditch-Davis. Brunssen saw the position as an opportunity to learn the art of large-scale nursing research.

The following year, the PRAM research team received a National Institute of Mental Health (NIMH), NIH, grant to study "Parental Care Giving with Infants Sero-Positive for HIV." They looked to Brunssen to get the program on its feet. "We took many measures of infant cognitive and motor development, but I wanted to contribute something that prevented the problems we were seeing in these infants," said Brunssen.

Brunssen found a way to contribute in 1995 with a clinical training fellowship from the National Institute of Environmental Health Sciences (NIEHS), NIH. She began working under the mentorship of Dr. Jean Harry, the head of the NIEHS neurotoxicology group.

"Dr. Harry was having me study microglia and astrocytes in cell culture and the way they communicated with each other in hypoxic injury (inadequate oxygen). I did multiple projects in the lab and learned a good deal about cell-culture work, basic molecular biology,

and basic biological assays like ELISAs (enzyme-linked immunosorbent assays). I also learned a good deal about the ethics of handling animals in research."

The last two years of Brunssen's fellowship overlapped the beginning of her doctoral studies at UNC Chapel Hill School of Nursing. With the fellowship nearing its end, Drs. Harry and Holditch-Davis sponsored Brunssen in a National Research Service Award (NRSA) making it possible for her to continue the research she had started during her fellowship.

Brunssen's NRSA research focused on developing a model for the then emerging theory of the fetal-inflammatory-response hypothesis, which came from clinical studies that demonstrated a link between maternal infection, even if it was not diagnosable or symptomatic in the mother, and the fetal tissue's response to that infection.

The model she created involved newborn mice. At the time a mouse is born, its brain development is equivalent to the human fetus at 24 weeks gestation. At 42 days, their brains are equivalent to human teenagers. She exposed the developing cerebral cortex of mice in the first week after birth to a biologically active form of Interleukin-6, a cytokine that is produced during inflammation.

"I monitored the mice for 100 days and found subtle but measurable behavioral changes," said Brunssen. "The animals become very hyper-excitable, hyper-reactive, I call it, to any kind of stimulation. When I handle them, when I try to test their hearing or their reaction to touch, they become very hyper-reactive. Even with a loss of inhibition combined with hyper-reactivity, the mice were still capable of learning spatial tasks (mazes). But if I kept testing them, they acted bored and their performance fell off. These symptoms are similar to those of children who have attention difficulties and demonstrate hyperactivity. These are the hallmark problems of the largest portion of babies that survive extreme prematurity without showing significant structural damage to the brain."

Brunssen received funding from the University's Research Council, and the SON's Center for Research on Chronic Illness and Research Support Center for pilot studies to explore hypotheses from her behavioral findings. She was also supported by two of the core facilities of the Neurodevelopmental Disorders Research Center at UNC: the mouse behavioral phenotyping laboratory and the microarray analysis core.

"The brain isn't 'done' developing even at term birth. Structural and functional systems develop in a very dynamic way, as the fetus, and later the baby, interacts with its environment. Several receptors for neurotransmitters change in their type and function from excitatory to inhibitory during the first three weeks of life in the mouse [equivalent to 20 weeks gestation to months after birth in humans]. At the same time, glia cells that specialize in myelin production are also developing, and are important because they 'insulate' nerve fibers to speed signal transduction. So in theory, the functional behaviors identified in the mouse model could result from enhanced excitatory signals, or loss of inhibitory signals or altered myelination," said Brunssen.

The pilot studies provide preliminary data to develop specific hypotheses on mechanisms, using molecular methods (microarray and polymerase chain reaction) to examine changes in gene expression, immunohistochemistry studies on tissue sections to look for proteins, and biochemical analysis of developing myelin.

Brunssen is currently preparing a proposal for a Mentored Research Scientist Career Development Award (KO1) to examine the effects of early exposure to inflammatory mediators on the processes of neurotransmitter-receptor and myelination development in the brain.



Susan H. Brunssen
PhD, MSN, BSN
Assistant Professor

Dr. Susan Brunssen runs an ELISA (enzyme-linked immunosorbent assay) to measure cortisol, a protein found in saliva samples. Brunssen is working during a hands-on laboratory course on this method to teach several faculty and doctoral students in the Biobehavioral Laboratory.

Program of research:

Neurocognitive outcomes of extreme prematurity, especially related to attentional/disinhibitory disorders; Infectious and hypoxic insults in infancy; Neuroimmune interactions and effects on the developing brain; Perinatal animal models of neuroimmune modulation; Behavioral phenotyping of mice throughout development; Genetic polymorphisms in populations with disparities in extreme preterm birth or its neurocognitive sequelae

Research projects:

Principal Investigator, "Exploring the effects of perinatal exposure to Hyper-IL6 on developmental regulation of neurotransmitter receptors in the mouse cerebral cortex," University Research Council, University of North Carolina at Chapel Hill, 2005-2007.

Principal Investigator, "Alterations in Myelin and GABA Receptors Gene Expression in Mouse Cortex Following Exposure to Hyper-Interleukin-6," Funded by a Faculty Research Opportunity Grant, School of Nursing, University of North Carolina at Chapel Hill, 2005- 2006.

Education:

PhD, Nursing, University of North Carolina at Chapel Hill, Chapel Hill, NC

MSN, Pediatric Nursing, University of Alabama at Birmingham, Birmingham, AL

BSN, University of Maryland, Baltimore, MD



Barbara Carlson (left)
PhD, RN
Assistant Professor & Associate Director,
Biobehavioral Lab

Virginia Neelon (right)
PhD, RN
Associate Professor & Director,
Biobehavioral Lab

Programs of research (Carlson):

Biobehavioral measurement; Gerontology; Physiological signal processing/analysis; EEG sleep and arousal in older adults; Patterns of Respiratory periodicity and cardiovascular responsivity during sleep; Neurocognitive measures and assessment; Cerebral oxygenation in sleep; Biological markers of memory impairment and cognitive decline in older adults

Programs of research (Neelon):

Delirium/acute confusion and chronic cognitive impairment in older adults (measurement and intervention); Role of hypoxic challenge in sleep and cognitive decline in older adults; Physiology of aging; Biobehavioral science theories in acute and chronic illness; Study of biobehavioral markers of vulnerability and resilience; Biobehavioral measures of intervention effect in nursing research

Research projects:

"Respiratory Periodicity and Cognitive Decline in Elders," Funded by the National Institute of Nursing Research, National Institutes of Health, ROI NR08032, 2002-2006. Principal Investigator: Barbara Carlson. Co-Investigators: John R. Carlson, Virginia Neelon.

"Core Body Temperature Rhythm, Cytokines and Respiratory Periodicity During Sleep in Older Adults With and Without Age-Associated Memory Impairment," Funded by the Center for Research on Chronic Illness, School of Nursing, The University of North Carolina at Chapel Hill, National Institute of Nursing Research, National Institutes of Health, 2002-2004. Principal Investigator: Barbara Carlson. Co-Investigators: John R. Carlson, Virginia Neelon, Pamela Johnson Rowsey.

Education (Carlson):

Postdoctoral Research Fellowship, University of North Carolina at Chapel Hill, Chapel Hill, NC

PhD, University of North Carolina at Chapel Hill, Chapel Hill, NC

MSN, University of North Carolina at Chapel Hill, Chapel Hill, NC

BSN, University of Pittsburgh, Pittsburgh, PA

Education (Neelon):

PhD, Physiology and Pharmacology, Duke University, Durham, NC

MSN, University of California at San Francisco, San Francisco, CA

BSN, Duke University, Durham, NC

Decline in Elders

Barbara Carlson, PhD, RN & Virginia Neelon, PhD, RN

When Dr. Barbara Carlson enrolled in UNC Chapel Hill School of Nursing master's program in 1986, she brought with her an interest in the physiology of cognition in the elderly. "As a critical care nurse, I had been particularly interested in looking at oxygen and blood pressure, things that would affect the brain, but there were neither measures to measure brain oxygen out there, nor techniques or even ways of thinking about cognition and cognitive decline."

Influenced by Dr. Virginia Neelon, an SON associate professor and well known expert in acute confusion, Carlson acquired new ways of thinking about cognition by relating poor sleep to confusion and confusion to cognitive decline.

"In the late 80s while I was in my doctoral program I started to look at the popular literature. Sleep apnea was a hot topic and there was a big question about whether sleep apnea had any relationship to dementia," said Carlson.

Looking at evidence from the literature and from her lab research, Carlson had two concerns. First, she saw no proof of an age at which people predominately develop sleep apnea. Secondly, she reasoned that if young people had sleep apnea they would usually not live to age 65, when symptoms of dementia start to show, because they would develop strokes or heart conditions.

"There's probably a different kind of breathing pattern that looks like sleep apnea but isn't," said Carlson. "My hypothesis is that it's not the same as apnea but maybe an apnea-like condition that develops in aging. What does that mean? We don't know. So, one of my research aims was to characterize breathing during the night to understand the phenomenon of age-associated change in patterns. Then, given that breathing is so tied to oxygen level in the blood, I asked, 'What are the clinically significant patterns that we need to be concerned about?'"

To answer these questions, Carlson shifted her attention slightly to the measurement and characterization of respiratory periodicity. Vital functions fluctuate during sleep, and studies suggest that those functions vary less in medically frail populations, especially the very old and chronically ill older adults. Apnea, or slow shallow respiration during sleep, cause and are terminated by arousals during sleep that increase the frequency and amplitude of breathing cycles, creating patterns described as "respiratory periodicity." Carlson believes that people who tend not to arouse during sleep in response to apnea will experience greater rates of cognitive decline.

Under the mentorship of Neelon, Carlson became the first research assistant employed by the SON's Biobehavioral Lab (BBL). "The first computer in the BBL was booted from a diskette," she said. "Computers got better, they got faster. New techniques for analyzing data allow us to come up with measures. Now in one night I collect 500 megabytes of data per subject, and I take those data and construct measures that characterize people's breathing or characterize how they sleep."

Carlson not only encountered new techniques and equipment to measure sleep, she began devising her own. During her dissertation research, Carlson developed the NIRMS, the Non-Invasive Respiratory Monitoring System. She used the system to monitor breathing and body movement during sleep. She later created an algorithm that allows her to use standard monitoring techniques to classify breathing into five-minute segments, which she subsequently refined by categorizing the magnitude of variability.

Carlson built an ever-growing body of findings. She secured funding for three pilot studies from the SON's Center for Research on Chronic Illness and the Research Support Center, with additional support from UNC Institute on Aging, and UNC General Clinical Research Center.

Findings from those studies remain valid, and Carlson uses them to guide her current five-year project "Respiratory Periodicity and Cognitive Decline in Elders" funded jointly by the National Institute of Nursing Research at the

National Institutes of Health and the UNC General Clinical Research Center.

Carlson also uses the INVOS 4100, an instrument that uses adhesive sensors on the forehead to measure cerebral oxygen. In addition to employing her devices, experience and findings in her current research, Carlson is employing them with the assistance Dr. Henry Hsiao from the UNC School of Biomedical Engineering to develop a microprocessor-based unit to transmit signals from the subjects' homes to the Biobehavioral Lab via the Web.

Her future plans center on findings from a pilot study supported by the Center for Research on Chronic Illness in which she investigated brain oxygenation as a predictor of cognitive decline. Carlson has added that factor to respiratory periodicity in her current study and has identified a breathing pattern beyond sleep apnea that is associated with drops in oxygen in the blood. "We are also evaluating other measures that are likely to identify persons at significant risk for having drops in brain oxygen levels during sleep and hope to publish these data very soon," said Carlson.

With that validation, her next grant proposal will have the measures for testing interventions to improve sleep and cognition in older adults. Meanwhile, in addition to her research, Carlson continues to attract students from abroad who conduct dissertation research using Carlson's data while gaining valuable research experience by assisting Carlson with data collection, storage, management and analysis.

Currently, Carlson is working with doctoral students from the School of Nursing, the School of Biomedical Engineering, and the Department of Psychology. "It is the sharing of the research endeavor between students and faculty that encouraged me to continue my program of research at Carolina," said Carlson.

Genetics is a branch of science that studies heredity and variations in organisms to understand the affect these variations can have on individuals and families.

Researchers study heredity and variations in humans by looking at genes.

Occasionally a gene may be mutated and that mutation may increase a person's chance of developing a genetic disorder. Disorders can be detected through genetic testing which identifies changes or mutations in genes or DNA. While many tests exist, choosing to go through with testing can be a complex decision.

Read on to see how one SON researcher is helping families understand and cope with the ethical, legal, and social issues associated with genetic testing.

Family Experience of Being Tested For and Living with a Genetic Condition

Marcia Van Riper, PhD, RN

Dr. Marcia Van Riper who holds a joint appointment with the SON and the Carolina Center from Genome Sciences, decided to pursue training in genetics and ethics to keep pace with the genetics revolution. With the Carolina Center for Genome Sciences, Van Riper serves as co-leader of the Translational Genomics Group where one of her main roles is to bring together UNC researchers who are interested in ethical, legal, and social implications of recent advances in genetics.

Van Riper's application for a K01 (Mentored Scientist Research Development Award) was funded by the National Institute of Nursing Research, National Institutes of Health, in 2000. As part of her K01, "Family Experience of Genetic Testing: Ethical Dimensions," Van Riper earned a master's in bioethics; developed a strong knowledge base in clinical genetics; and interviewed 118 individuals from 67 families for a mixed method study designed to examine how families define and manage the ethical issues that emerge during four types of genetic testing: prenatal screening for Down syndrome, carrier testing for cystic fibrosis, BRCA 1 & 2 testing for families at high risk for breast cancer and mutation analysis for Huntington disease.

Findings from Van Riper's research on well-being in families of children with Down syndrome suggest that while some families have difficulty adapting to the ongoing challenges associated with raising a child with Down syndrome (increased caregiving difficulties, changes in roles and increased time demands), other families adapt successfully and even thrive.

For example, one mother of a child with



Abigail Wright

Photo courtesy of Dr. Marcia Van Riper.

Down syndrome told Van Riper, "Our entire family and marriage is stronger. It has changed our view of the world, our view of ourselves, and others. It has made us more giving and less selfish. It has drawn us closer to God. It has caused us to be more concerned about others who are different. It has shown us what we value in life—relationships—not power and wealth. It has made us more content to just be!"

Van Riper's research on the family experience of genetic testing indicates that families influence, and are influenced by, how individual family members make sense of, respond to, and use the information they receive during the genetic testing experience.

Her research also indicates that during the genetic testing experience most families face ethical issues, such as concerns about reproductive freedom, disclosure of test results, testing of children, insurability, stigmatization and access to testing. While some families are able to successfully manage these complex issues, others are not.

Currently Van Riper is conducting two pilot studies about how minority families make sense of and use the results of genetic testing. Ultimately, Van Riper would like to develop an assessment tool that would help clinicians identify which

families are at increased risk for adverse outcomes following genetic testing. She would also like to develop and test culturally sensitive, family-centered interventions for families who are at increased risk for adverse outcomes.

"My research about the family experience of genetic testing has greatly improved my ability to teach genetics, ethics, and family content to students," said Van Riper who has assumed a lead role in integrating genetics in the undergraduate and graduate curricula at the SON.

"The pace and magnitude of recent genetic discoveries has made it virtually impossible for nurses not to be involved in some aspect of genetic health care. My goal is to get our students excited about genetics and help them see how they can play a critical role in helping families maximize the benefits of the genetics revolution," said Van Riper.

According to students in one of Van Riper's genetics courses, the inclusion of individual and family stories about genetic testing made "genetics come to life." Another student said, "When I heard we had to take a genetics course, I couldn't imagine why it was required for nursing school. After taking the course, I can't imagine schools without this genetics course." Van Riper's courses help students gain a broader, more in-depth understanding of the complex ethical, legal, and social issues associated with genetic testing.

Student questions and concerns, as well as her ongoing commitment to teach up-to-date, applicable and interesting content, fuel Van Riper's never-ending desire to seek out and get involved in research, service and learning opportunities related to genetics, ethics and family nursing.



Marcia Van Riper
PhD, RN

Associate Professor, School of Nursing and Carolina Center for Genome Sciences

"The pace and magnitude of recent genetic discoveries has made it virtually impossible for nurses not to be involved in some aspect of genetic health care. My goal is to get our students excited about genetics and help them see how they can play a critical role in helping families maximize the benefits of the genetics revolution," said Dr. Marcia Van Riper.

Programs of research:

Families being tested for and living with genetic conditions; Well-being in families of children with Down Syndrome and families of preterm infants; Family-provider relationships; Ethical issues in genetic testing; Feeding Issues for children with Down syndrome; Siblings of children with Down syndrome; Genetic testing in minority families

Research projects:

Principal Investigator, "Family Experience of Genetic Testing: Ethical Dimensions," National Institute of Nursing Research, K01 NR00139, 2000-2004.

Principal Investigator, "African American families making sense of and using the results of genetic testing for sickle cell disease," Faculty Research Opportunity Grant, University of North Carolina at Chapel Hill School of Nursing, Chapel Hill, North Carolina, 2004-2005.

Principal Investigator, "Minority families being screened for and living with genetic conditions," Center for Innovation in Health Disparities Research, University of North Carolina at Chapel Hill School of Nursing, Chapel Hill, NC, National Institute of Nursing Research, National Institutes of Health, 2003-2005. Co-Principal Investigator: Jo Dowell.

Education:

PhD, Nursing, Psychology, University of Wisconsin-Madison, Madison, WI

MA, Bioethics, Case Western Reserve University, Cleveland, OH

MSN, University of Wisconsin-Milwaukee, Milwaukee, WI

BSN, DePauw University, Greencastle, IN

FOCUS *on* Systems and Quality Care



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While the U.S. healthcare system is making strides to help people live longer, healthier lives, it has also come under harsh criticism. Our systems are challenged by rising costs, concerns for safety, lack of accessibility and inconsistent practices.

In 2004 the Agency for Healthcare Research and Quality released its National Healthcare Disparities Report showing that health disparities related to race, ethnicity and socioeconomic status are pervasive in the U.S. Its 2004 National Healthcare Quality Report showed improvements from last year in areas of effectiveness, safety, timeliness, and patient centeredness, but that significant gaps between best care and actual care still remain large.

Some researchers argue that our systems tend to be more reactive than proactive in addressing the needs of patients, and families. Researchers at the SON, including

the six highlighted in the following pages, are exploring various healthcare systems, from home healthcare to more traditional systems, identifying the issues influencing quality of care, and taking steps to improve healthcare systems and quality in North Carolina and the nation.

And, in the wake of nursing shortages across the country, SON researchers are further investigating organizational

structures of healthcare systems to learn how they impact the nursing workforce.



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Nursing Performance and Quality of Care

Barbara Mark, PhD, RN, FAAN

"When I began my study of health-care systems and organizations in the 1980s, it was really an exciting time. It was a great challenge to be focusing on this topic at a time when the issues surrounding organization and quality of care were not widely recognized," said Dr. Barbara Mark who started her career as a staff nurse, clinical specialist and nurse administrator in both clinical and academic settings. "It was during my time as a clinical nursing administrator that I decided to pursue my PhD," she said. And, it was during my career as an academic administrator that I really became interested in research."

Mark, who has studied nursing work environments, quality and safety in acute care hospitals for more than two decades, is currently involved in two projects: "A Model of Patient and Nursing Administrative Outcomes," (the ORNA-II Project), funded by the National Institute of Nursing Research, National Institutes of Health, and "Nurse Staffing, Financial Performance and Quality of Care," funded by the Agency for Healthcare Research and Quality (AHRQ). Both studies expand on Mark's earlier research and address critical issues in healthcare systems.

"The ORNA project grew out of my desire to identify critical hospital and nursing unit variables that nurse executives and nurse managers need to consider as they make decisions about how care is organized and delivered in their units," said Mark who is analyzing data from the ORNA II study now. Data were collected over a six-month period at 160 general acute care hospitals across the country. Researchers obtained data from almost

5000 nursing staff and 3500 patients. Results will be appearing some time next year. Mark hopes that the results will be useful to nurse executives and managers.

While the research team continues to analyze data from ORNA-II, Mark's AHRQ research has already produced some interesting findings. The AHRQ study is unique because it is the only one of its kind looking at the relationship between change in nurse staffing and change in quality of care over time.

The study sampled a panel of 422 hospitals across the country from 1990 to 1995 examining the relationships among change in nurse staffing, change in hospital financial performance, and change in quality of care. "The AHRQ findings are telling us that more nurses reduce in-hospital mortality, but only up to a certain point," said Mark. This article appeared in *Health Services Research* in 2004.

Mark also investigated whether managed care penetration and hospital ownership moderate these relationships. "The findings show that the relationship between nurse staffing and quality does depend upon the level of managed care penetration as well as ownership type," said Mark.

For example, there is a strong relationship between nurse staffing and quality in markets that have high levels of managed care penetration, but Mark and her research team did not find evidence of that relationship in low managed care markets. "This may say something about how hospitals behave differently in more competitive markets," said Mark.

"Understanding the relationship among nurse staffing, financial performance and quality of care will help healthcare system administrators to make better informed decisions about policy development and to manage better cost-quality tradeoffs in high-intensity, high-cost acute care hospitals," said Mark. Results from this article

appeared in the *Journal of Health Care Financial Management* in 2003.

Mark is also the principal investigator of an Institutional National Research Service Award to prepare nurse researchers to improve the quality of health care and contribute to patient outcomes.

The award, "Research Training: Health Care Quality and Patient Outcomes," funded by the National Institute of Nursing Research, National Institutes of Health "is exceptional because it is multidisciplinary in focus," said Mark. "We've partnered with the Department of Health Policy and Administration as well as the Cecil G. Sheps Center for Health Services Research to offer pre- and post-doctoral fellows a wealth of opportunities to participate in this type of research."

Responding to a 2000 Institute of Medicine report that indicated approximately 44,000 deaths result annually due to medical errors, the program will use the IOM's criteria for quality health care — safety, effectiveness, patient-centeredness, timeliness, efficiency and equity — as its organizational framework.

"Improving the quality of health care depends upon active and ongoing collaboration among the health professions. This is true in both research and in working together to develop strategies that can be used successfully in health system change," said Mark. The award will support 10 predoctoral and 6 post-doctoral trainees.



Barbara Mark
PhD, RN, FAAN

Sarah Frances Russell Distinguished Professor in Nursing Management & Co-Director of the Southeast Regional Center for Health Workforce Studies

Mark encourages students to be open to new ideas and new opportunities. "It's okay not to have your whole life planned out," she said. "I feel very fortunate to have been able to take advantage of great opportunities as they presented themselves, rather than focusing on getting to a goal through serious career planning."

Programs of research:

Organization of acute care health systems; Organization theory; Work environment and patient safety research; Quality of care in acute care hospitals

Research projects:

Principal Investigator, "A Model of Patient and Nursing Administration Outcomes," Funded by the National Institute of Nursing Research, National Institutes of Health, R01 NR03149, 1995-2007. Co-Investigators: Michael Belyea, Cheryl A. Jones.

Principal Investigator, "Nursing Staffing, Financial Performance and Quality of Care," Funded by the Agency for Healthcare Research and Quality, R01 HS10153, 1999-2005. Co-Investigators: Wallace Berman, David Harless.

Education:

Post Doctorate, Quantitative Methods/Hierarchical Linear Modeling, University of Michigan, Ann Arbor, MI

Post Doctorate, Quantitative Methods/LISREL, University of Michigan, Ann Arbor, MI

PhD, Nursing/Organization Theory, Case Western Reserve University, Cleveland, OH

MN, Psychosocial Nursing, University of Washington, Seattle, WA

BS, Nursing, Skidmore College, Saratoga Springs, NY



Mary Lynn
PhD, RN
Associate Professor

Programs of research:

Definition and measurement of quality of care; Work satisfaction; Organizational commitment; Patient-centered intervention; Patients' expectations; Outcomes measurement; Instrument Development and Evaluation; Predicting success in undergraduate nursing program

Research projects:

Principal Investigator, "Testing a Model of Quality Care in Home Health", National Institute of Nursing Research, National Institutes of Health, R01 NR05279, 2002-2007.

Education:

PhD, Psychometrics and Evaluation, University of Florida, Gainesville, FL

MN, University of Florida, Gainesville, FL

BSN, University of Florida, Gainesville, FL

Diploma, Nursing, Orange Memorial Hospital, Orlando, FL

A Model for Quality Care in Home Health

Mary Lynn, PhD, RN

Home health care is the fastest growing sector in the healthcare system. People are choosing home health care over traditional hospital care when they can because of the comfort and security of being in familiar surroundings. Despite the growth in the number of people receiving home health care, there is a general lack of consistent, reliable methods for evaluating the quality of that care.

"Until now, methods of evaluating the quality of home health care have been idiosyncratic, un-standardized or simply ignored," said Dr. Mary R. Lynn, principal investigator of "Testing a Model for Quality Care in Home Health," funded by the National Institute of Nursing Research, National Institutes of Health. Lynn has spent the last 25 years working to define and measure quality care.

"Often quality of care is measured in terms of risks rather than the actual care a patient received or should have received. I'm trying to assess the relationships between the care environment, the care provided and the patients' recovery when home care is finished," said Lynn, whose study adapts a commonly recognized model of quality care espoused by Avedis Donabedian, an expert in healthcare quality assessment—structure, process and outcome.

Structure is what exists in the care environment that provides the "materials" or support for the care to be given. Process, or the "atomic furnace where

quality is generated," is the actual care delivered. And outcomes are the "end products" of care—the patient's status when the care has ended.

In Lynn's study, the home becomes the structure or care environment in the model, and is evaluated by data collectors who assess the patient's home when they make their first data collection visit.

The process component of the model posed some challenges to the study. "We can easily talk about process but when it comes to measuring process, we have no clear way to go about it," said Lynn. "So, we created instruments that allow patients to evaluate the care they receive at home, and allow nurses to evaluate the care they provide." The process of care is also examined by looking at the number of visits a patient received during care, looking at the length of those visits and looking at the type of healthcare provider that was present during that visit.

When evaluating the outcome component of the model, Lynn encountered some unique issues. "We wanted to assess the patient's, or his/her caregiver's, knowledge of: the diagnoses, things to watch for, medications and when he/she should call for a healthcare provider," said Lynn. "But because each patient in the study has a distinct diagnosis, each assessment has to be evaluated individually for each patient in the study."

Lynn and her research team are in the process of recruiting and gathering data for 900+ study participants. "Our biggest challenge has been recruiting nurses to participate and keep us informed of the patients' discharges," said Lynn. Nurses play a large role in the study because home health care is a predominantly nursing-managed and care-provided environment.

"Ultimately, we want to improve the quality of home health care," said Lynn. "Right now the actual process—how care is provided—is a black box. I'm trying to open that box to get an idea of how well caregivers prepare patients to care for themselves after discharge."

While the study is still a good two or three years away from completion, Lynn expects to be able to provide the home health community with information about aspects of the patient's situation, their health status or care that will lead to better outcomes.

"Ultimately, we want to improve the quality of home health care," said Lynn. "Right now the actual process—how care is provided—is a black box. I'm trying to open that box to get an idea of how well caregivers prepare patients to care for themselves after discharge."

Nursing in U.S. Army Hospitals

Barbara Jo Foley, PhD, RN, FAAN

Dr. Barbara Jo Foley joined the U.S. Army Reserve in 1970 where she spent 16 years as a part-time Army Nurse Corps officer. In 1986, she went on a 14-year active duty tour with the Army. During her active duty, she decided to pursue her PhD.

At the time, one of Foley's doctoral professors was conducting a research study on "Nursing Processes and Patient Outcomes in Civilian Hospitals." Foley said she was fascinated by the study, and decided to conduct a similar study in Army hospitals, as no such data had ever been collected.

In her current study, "Nursing Processes and Patient Outcomes in U.S. Army Hospitals," funded by the TriService Nursing Research Program, Foley links nursing processes and structures to patient outcomes. She also compares and contrasts military and civilian hospitals on measures of nursing processes, structures and patient outcomes.

"My aims are to explore the differences and commonalities between military and civilian hospitals and hopefully provide insight into ways of improving patient outcomes and improving the work environment of nurses," said Foley.

In a similar 1999 study, Foley and her research team noted that all active-duty Army nurses that participated in the study had a minimum of a BSN education and therefore were more homogeneous than nurses in most civilian hospitals.

Foley further found that 42% of the civilian nurses who worked the Army Medical Centers studied had a BSN, indicating that 69% of all the nurses who participated had a minimum of a BSN education. This figure is well above average. National demographics indicate that only about 33% of all nurses are educated at the BSN level



In her current study, "Nursing Processes and Patient Outcomes in U.S. Army Hospitals," funded by the TriService Nursing Research Program, Foley links nursing processes and structures to patient outcomes. She also compares and contrasts military and civilian hospitals on measures of nursing processes, structures and patient outcomes.

Participating nurses in both studies completed the Nursing Work Index Revised (NWI-R), a nurse satisfaction tool, and also the Manifestations of Early Recognition (MER) tool, which measures clinical expertise.

In the 1999 study, scores on three of the four scales of the NWI-R (autonomy, control over practice, and nurse-physician relationships) were all near or above midpoint for respondents as a group, indicating positive work environments in the military hospital studied. Scores on the MER were well above midpoint, indicating a desirable level of clinical expertise. Despite regularly reported nursing shortages, these findings reflect favorably on the military hospital work environment.

"We were surprised to find that the control over practice and autonomy scales for the nurses in military hospitals were lower than a similar group of nurses in a civilian hospital," said Foley. "We'll need to research how control over practice and autonomy are defined in a military hospital as compared to a civilian hospital. Perhaps the military requires more teamwork and collaboration, thereby making it more desirable to attenuate individual autonomy and control over practice," said Foley.

The patients who participated in the study also completed a number of survey tools. Findings indicated that both acuity and adverse events were low. Low acuity might be attributed to a study requirement that says all patient participants

had to survive to discharge, and complete and return a questionnaire. The very low number of adverse events, defined by the American Nurses Association as falls, decubitus ulcers and urinary tract infections, might indicate that they are not useful measures in linking nursing care to patient outcomes in military hospitals.

The length of stay for this patient sample was one day shorter than the average of almost five days for hospital inpatients nationwide. Satisfaction with nursing care was high. Satisfaction with pain management was also high, but that may be a reflection of nurse caring more than actual pain relief. One study found that when nurses express concern about pain, patients are satisfied even if pain is not relieved. The 1999 study did not compare and contrast the military data with civilian data.

A unique factor affecting this study was the war in Iraq. In one of the Army hospitals, almost all of the military nurses were deployed about a week after the nurse surveys were distributed. The investigators will modify the protocol to survey the nurses when they returned from Iraq.

Data analysis for the study will continue another few months before Foley will begin publishing the data.



Barbara Jo Foley
PhD, RN, FAAN

*Clinical Professor & Chair,
Academic Division II*

"My aims are to explore the differences and commonalities between military and civilian hospitals and hopefully provide insight into ways of improving patient outcomes and improving the work environment of nurses," said Dr. Barbara Jo Foley who joined the U.S. Army Reserve in 1970 where she spent 16 years as a part-time Army Nurse Corps officer.

Programs of research:

Advocacy by nurses on behalf of patients;
Negotiating within complex organizations;
Nurse-Influenced patient outcomes;
Administrative and management skills;
Military nursing; Continuing education

Research projects:

Principal Investigator, "Nursing Processes & Patient Outcomes in US Army Hospitals," TriService Nursing Research Program (TSNRP) N02-020, 2002-2004.
Co-Investigators: Mona Bingham, Susan Harvey, Carolyn Kee, Ptlene Minick.

Education:

PhD, Georgia State University, Atlanta, GA

MN, Emory University, Atlanta, GA

BSN, University of North Carolina at Chapel Hill, Chapel Hill, NC



Cheryl Jones
PhD, RN, FAAN

*Associate Professor & MSN Coordinator,
Health Care Systems*

Dr. Cheryl Jones advocates using nurse turnover costs to build a business case for nurse retention. She plans to continue studying nurse turnover to understand better the potential effects of nurse turnover on quality of care, patient and staff satisfaction and safety, and organizational performance. "We literally can not afford to ignore nurse turnover or the costs associated with turnover," said Jones.

Programs of research:

Nursing turnover and retention; Nursing workforce and labor market; Quality & patient safety; Costs and outcomes of health services; Economics of care delivery; Nursing work environment; Health services research

Research projects:

Principal Investigator, "Differential Nursing Employment Patterns: A Region IV Analysis of Race and Ethnicity," Funded by the Southeastern Regional Center for Health Workforce Studies, Cecil G. Sheps Center for Health Services Research, The University of North Carolina at Chapel Hill; Health Resources and Services Administration, 2003-2007. Co-Investigators: Michael Belyea, Michael Gates, Barbara Mark.

Education:

PhD, Nursing, Economics, University of South Carolina, Columbia, SC

MS, Nursing Administration, University of South Carolina, Columbia, SC

BSN, University of Florida,
Gainesville, FL

Nurse Turnover

Cheryl Jones, PhD, RN, FAAN

As our healthcare system continues to evolve, organizations and employers find themselves face to face with new challenges. Dr. Cheryl Jones is taking a closer look at the economic challenges of an old problem—nurse turnover.

Causes of nurse turnover have been studied in the past—burnout associated with shortages, low pay and hazardous working conditions—are just a few of the factors that contribute to high turnover. In Jones's studies "The Costs of Nursing Turnover Part 1: An Economic Perspective," and "The Costs of Nursing Turnover Part 2: Application of the Nursing Turnover Cost Calculation Methodology," funded by the School of Nursing Faculty Research Opportunity Grant, she examined the cost to organizations who ignore these factors.

"I wanted to provide tools to nurse executives that help them quantify the costs of nursing turnover, better allocate nurse retention resources, make more informed resource allocation decisions, and demonstrate potential cost savings if retention investments are made. Most importantly, I hoped to draw attention to the fact that nurse turnover has potential adverse consequences for organizations," said Jones.

According to Jones, turnover has several financial consequences for healthcare organizations including loss of return on investments to recruit, hire and train nurses, loss of productivity in the short-term and instability in the workforce. Organizations incur costs when supplemental or temporary staffs are employed, beds are closed, patients are deferred or employed nurses are asked to work additional hours to fill vacancies. "In essence, nurse turnover consumes resources that could be directed at core

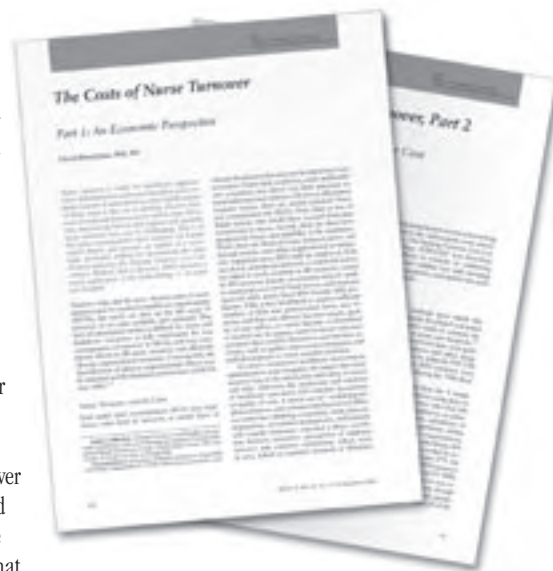
business activities, such as quality improvement programs, and staff development or nurse retention activities," said Jones.

Jones developed and tested the original Nurse Turnover Cost Calculation Methodology (NTCCM) in 1988 by gathering data from a sample of chief nurse executives and other designated hospital representatives. She found an average annual RN turnover rate of almost 27%. Based on relevant costs available at the time, Jones found that the overall cost of RN turnover at the participating hospitals was nearly \$1 million a year, and the mean cost per RN was about \$10,000.

"While the hospitals studied had attempted to keep track of the nurse turnover, none of them had quantified or estimated the actual cost of that turnover. Yet, all of the hospital administrators confirmed the importance of understanding the fiscal costs in their efforts to recruit and retain a highly qualified and diverse nursing workforce to meet the changing needs of society," said Jones.

Nearly 15 years later, the problem only seems to be growing. "The healthcare environment has changed, and so have the costs associated with turnover," said Jones who revised the NTCCM to reflect changes in the healthcare environment by using an expert panel of economists, nurse executives and researchers.

Application of the method in Jones's recent study sample revealed turnover costs to be one to three times those found in her 1988 study, with the exception of vacancy costs, which were 12 times those costs previously found. The study yielded a per RN turnover cost that ranged from approximately \$62,100 to \$67,100, and



Jones's recent studies

"The Costs of Nursing Turnover Part 1: An Economic Perspective," and "The Costs of Nursing Turnover Part 2: Application of the Nursing Turnover Cost Calculation Methodology," were published in The Journal of Nursing Administration.

a total nurse turnover cost that ranged from approximately \$5.9 to \$6.4 million at the participating study hospitals.

Jones advocates using nurse turnover costs to build a business case for nurse retention. She plans to continue studying nurse turnover to understand better the potential effects of nurse turnover on quality of care, patient and staff satisfaction and safety, and organizational performance. "We literally can not afford to ignore nurse turnover or the costs associated with turnover," said Jones.

Building Capacity for Better Work and Better Care

Donna Sullivan Havens, PhD, RN, FAAN

Dr. Donna Havens considers herself fortunate to have walked in the worlds of nursing practice, administration, research and academe.

After nearly 20 years of researching the quality of the nursing work environment and the quality of patient care, Havens believes that research evidence clearly identifies organizational features that are associated with positive staff and patient outcomes.

"This research provides an outstanding and much needed base for the education of those leading the delivery of health care in general and specifically those trying to improve the quality and safety of care delivered to patients in hospitals,"

In her current study "Building Capacity for Better Work and Better Care," Havens is exploring how to create those features that are associated with positive outcomes and how to sustain them. "I want to find a way to make them 'stick,'" said Havens.

The five-year study, funded by the U.S. Department of Health and Human Resources' Health Resources and Service Administration's (HRSA) Nurse Education, Practice and Retention Program, builds on Havens's past research that examined how hospitals implemented and sustained changes in the nursing work environment to enhance patient care. "Building Capacity for Better Work and Better Care," aims to enhance: nurse involvement in decisions about nursing work and patient care; communication and collaboration between nurses and other disciplines and departments; and cultural awareness and sensitivity toward patients and staff.

The study targets hospitals in rural areas and HRSA-designated "professional nurse shortage areas" that are facing challenges to recruit and retain nurses. Currently Havens and her research team are involved in participatory action research, where researchers partner with subjects to identify areas for change in an organizational setting, with six partner hospitals spread across the state of Pennsylvania.

Capacity building strategies include activities used to translate research into practice such as: providing data feedback that hospitals will use to identify opportunities for change; holding three to four collaborative meetings where 6- to 10-member interdisciplinary teams from the partner hospitals work together, developing action plans to meet objectives; mentoring, with expert consultation from magnet hospital staff, who have implemented such organizational characteristics.

In addition, the project focuses on positive organizational change, thus an appreciative inquiry method is being used throughout to discover what is working well that can be built upon to meet the study's objectives. "Hospitals are reporting that the appreciative inquiry process is creating excitement that is extending throughout their organizations and influencing the way they do business," said Havens.

"This project has the potential to dramatically influence patient care at our partnering organizations by building and preserving nursing staff," said Havens. "Enhanced nurse retention will help to improve the level of health care in these underserved areas by improving access to quality nursing care." The lessons learned from this project can be used as the foundation to replicate in hospitals in other states such as North Carolina. Havens's goal is to seek additional funding to extend this work with other hospital partners.

"This research provides an outstanding and much needed base for the education of those leading the delivery of health care in general and specifically those trying to improve the quality and safety of care delivered to patients in hospitals," said Havens.



Donna Sullivan Havens
PhD, RN, FAAN

Professor and Academic Division I Chair

Dr. Donna Havens is exploring how to create the organizational features associated with positive working environments for nurses and positive patient outcomes.

Programs of research:

Hospital organization and outcomes; Organization of nursing in hospitals; Evidence-based management and organization; Staff nurse decisional involvement; Nurse workforce issues; Magnet hospitals; Translating organizational research into practice; Nursing work environment; Implementation research

Research projects:

Principal Investigator, "Capacity for Better Work and Better Care," Funded by the US Department of Health and Human Services - Health Resources and Service Administration's Nursing Education, Practice and Retention Program, 2004-2009. Co-Investigators: Jennifer Leeman, Lynn Leighton, Joseph Vasey, Susan O. Wood, Leo Yurek.

Education:

Post-Doctorate, Nursing Organization, University of Pennsylvania, Philadelphia, PA

PhD, Nursing/Health Services Research, University of Maryland, Baltimore, MD

MSN, Villanova University, Villanova, PA

BS, Nursing, Cedar Crest College, Allentown, PA

Diploma, Nursing, Yale University Medical Center, New Haven, CT



Noreen Esposito
EdD, WHNP, FNP
Assistant Professor

Dr. Noreen Esposito, a women's health expert, is developing a typology of distress cues seen in sexual assault victims. "Documenting these cues will help nurses to interact with victims in ways that decrease short-term and hopefully long-term emotional trauma. It will move the science of sexual assault care forward and may increase a woman's willingness to seek care."

Programs of research:

Barriers and facilitators to women's health care including sexual assault care; Sexual assault & substance abuse; Intimate partner violence; Discrimination (race/ethnicity, gender, sexual orientation); Immigrant Hispanic women's health, menopause and access to care; Qualitative research, ethnography, focus groups

Research projects:

Principal Investigator, "Experiencing Discrimination: Instrument Development" Center for Innovation in Health Disparities Research, School of Nursing, The University of North Carolina at Chapel Hill, National Institute of Nursing Research, National Institutes of Health, 2002-2004. Co-Investigator: Cathy Canzona.

Education:

EdD, Nursing Education, Columbia University, New York, NY

Post-Masters Certificate, Family Nurse Practitioner, University of South Florida, Tampa, FL

MS, Nursing, Women's Health Nurse Practitioner, State University of New York at Stony Brook, Stony Brook, NY

BS, Nursing, University of the State of New York, Albany, NY

Diploma, Mount Sinai Hospital School of Nursing, New York, NY

Drug Abuse and Post Sexual Assault Care

Noreen Esposito, EdD, WHNP, FNP

"My clinical work with sexual assault victims gave me insight into the unique challenges faced by this tremendously underserved group," said Dr. Noreen Esposito, a women's health expert, whose early research reflects her desire to provide a voice to marginalized and underserved women who were not having their healthcare needs met.

In her 1991-93 study, "Giving back the body: Ethnography of an inner city birthing center," Esposito studied marginalized women's reproductive care. She found that the importance of the nurse-patient relationship, and the women's sensitivity to subtle and overt forms of supportive and non-supportive communication, were clearly linked to perceived quality of the health care.

In a later study, "Health Risks and Health Care Needs of Immigrant Hispanic Perimenopausal and Postmenopausal Women," funded by Wyeth-Ayerst, Esposito explored immigrant women's and providers' assumptions about and expectations of healthcare encounters in the context of menopause. She found that the women wanted provider-initiated, individualized, anticipatory guidance about menopause and acknowledgement that menopause symptoms were real and important.

In contrast, the providers who participated in the study believed that menopause was a minor problem for immigrant women and was overshadowed by more serious health problems such as diabetes, heart disease and HIV prevention. Where women saw the healthcare encounter as a social event, providers expected it to be short, efficient and businesslike. The women explained that when their menopause symptoms were not validated, or when they perceived providers as insensitive, they stopped going to that provider and sought alternative care.

These studies led Esposito to wonder how sexual assault victims perceive their care experiences. In "Women Drug Abusers and Post Sexual Assault Care," funded by the National Institute of Drug Abuse, Esposito interviewed 43 women to learn whether they sought health care after being sexually assaulted, and if so what that care was like.

Findings showed that the majority of participants, including those participants identified as drug abusers, did not seek health care following sexual assault. "For drug abusers, a negative experience with the police, fear of being arrested, fear of the assailant, or the need for more drugs deterred them from seeking health care," said Esposito.

Of the victims who did seek care, some viewed the sexual assault exam as a way to learn about sexually transmitted infections, HIV screenings, post-coital contraception and prevention of post-traumatic stress. Others found the intrusive nature of the exam and the need to retell assault details disturbing. Some provider behaviors such as touch, even when well-intentioned, were at times considered abhorrent.

For victims who did not seek care, the stigma of sexual assault was a powerful influence. "It [sexual assault] is such a disturbing experience, that women don't want to go for care," Esposito explained.

During the interviews Esposito said she was reminded of the dilemma sexual assault nurses face every time they provide care—balancing the nurse's need to gather pertinent, but disturbing information, while at the same time minimizing emotional trauma.

"When I interviewed victims, they offered specific behavioral cues about their level of distress. However, sexual assault victims do not display the same pattern of emotional distress cues seen in other types of trauma victims," said Esposito who is planning a study to develop a typology of distress cues seen in sexual assault victims. "Documenting these cues will help nurses to interact with victims in ways that decrease short-term and hopefully long-term emotional trauma. It will move the science of sexual assault care forward and may increase a woman's willingness to seek care."



FOCUS *on* Qualitative and Mixed Research Synthesis

For years researchers have been debating the pros and cons of qualitative and quantitative research. Only recently has there been a push to combine these two very different forms of research.

Non-numerical qualitative research aims to reveal behavior and perceptions that drive behavior.

Quantitative research contrasts qualitative research and produces numerical results.

Some researchers believe that the broader research base that could be created by combining qualitative and quantitative findings will enable research to be more readily applied in practice.

Read on to see how one SON researcher is taking on the challenge to create a broader evidence base for nursing research by combining qualitative and quantitative findings.



Margarete Sandelowski
PhD, RN, FAAN

Cary C. Boshamer Professor of Nursing
Editor, *Nursing Inquiry*, North America
Assistant Editor, *Research in Nursing and Health*

"Nursing offers limitless opportunities that we haven't even begun to tap into," said Sandelowski. "People pursue careers in nursing because they're 'called' to it, because of life experiences, because they want to make a difference and because nursing allows the pursuit of individual interests. Nursing has allowed me to pursue my interests in gender and technology studies, and in qualitative methodology."

Synthesizing Research Findings

Margarete Sandelowski, PhD, RN, FAAN

Dr. Margarete Sandelowski was exploring relatively uncharted territory in the late 1990s when she and her colleague, Dr. Julie Barroso, now an associate professor at Duke University School of Nursing, began their work on developing methods to synthesize qualitative research findings.

"The rapid proliferation of qualitative health research over the last 20 years, a new and more broadly-based appreciation for its value, and concerns over its under-utilization had generated increasing calls to incorporate qualitative research findings into systematic reviews of research. Scholars in the practice disciplines increasingly recognized that qualitative research bridges exploration and explanation in inquiry, and facilitates the move from research efficacy to clinical effectiveness," said Sandelowski, who is internationally known for her work in qualitative methods, and for her involvement with the Institute in Qualitative Research, a summer workshop offered by the SON, now in its 11th year.

Sandelowski's current study, "Integrating Qualitative & Quantitative Research Findings," funded by the National Institute of Nursing Research (NINR), National Institutes of Health, is directed toward developing methods for synthesizing the results from empirical qualitative, quantitative,

and mixed methods studies.

"A major barrier to the full utilization of research findings in practice is the lack of methods for integrating qualitative and quantitative research findings," said Sandelowski. "Separate progress has been made in the development of techniques to integrate quantitative research and qualitative research findings, respectively, but few efforts have been directed toward systematically combining findings from both qualitative and quantitative research in common topical areas or to address common clinical problems."

This study is a continuation of Sandelowski's & Barroso's NINR-funded study, "Analytic techniques for qualitative metasynthesis," the outcomes of which are soon to be published in *Synthesizing Qualitative Research* (New York: Springer). The two bodies of literature Sandelowski and Barroso, along with Dr. Corrine Voils, a psychologist at Duke University School of Medicine, will use to develop the methods consists of studies conducted with HIV-positive women in the areas of adherence to antiretroviral therapy and stigma.

The immediate goals of the study are four-fold: to clarify the relationships between qualitative and quantitative research findings in common research areas; to develop research designs for mixed research integration studies that

accommodate these relationships; to develop analytic techniques to link or transform qualitative and quantitative research findings for combination; and to produce credible and usable integrations of findings using these techniques. The long-term aims of the study are to facilitate the appropriate utilization of all kinds of empirical research findings in practice and to expand methodological options to accommodate diversity in health research.

"The central challenge for this project is addressing the problem of difference," said Sandelowski. "Difference, or heterogeneity, is recurrently identified as the most important factor complicating both the qualitative and quantitative research synthesis enterprises, respectively. Even studies of ostensibly the same variables or phenomena employing common methodological approaches will have differences that require finding a common metric or translation to enable integration of their findings. Complicating the heterogeneity problem is the prevailing view of the relationship between qualitative and quantitative research as exemplifying 'difference.'"

Sandelowski and her colleagues hope that their research will be used in the health sciences to produce more complex and relevant evidence syntheses in key domains of practice.

What is wonderful about nursing is that you can come to it with a background, not just in the sciences, but also in English, or history, or music, or engineering and use the ideas and practices in these disciplines to enhance both nursing research and practice. Nursing is a field that encourages diverse perspectives and passions. It is interdisciplinary in the truest sense of the word. Innovations in practice and research occur at the margins of diverse modes of inquiry."

Programs of research:

Qualitative methodology;
Gender and technology

Research projects:

Principal Investigator, "Integrating Qualitative & Quantitative Research Findings," funded by the National Institute of Nursing Research, National Institutes of Health, 2 R01 NR04907, 2005-2010.
Co-Principal Investigators: Julie Barroso, Corrine Voils.

Principal investigator, "Analytic Techniques for Qualitative Metasynthesis," funded by the National Institute of Nursing Research, National Institutes of Health, R01 NR04907, 2000-2005. Co-Principal Investigator: Julie Barroso.

Education:

PhD, American Studies, Case Western Reserve University, Cleveland, OH

EdM, Nursing Education, Columbia University, New York, NY

MS, Maternal-Child Nursing, Boston University, Boston, MA

BSN, University of Pennsylvania, Philadelphia, PA

Diploma, Beth Israel Hospital School of Nursing, Boston, MA

FOCUS *on* Research Support at the School of Nursing

By Jansen Averett & Alicia Raia



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The University of North Carolina at Chapel Hill is internationally renowned for its research endeavors. In fiscal year 2004–2005, the University's sponsored-research funding rose to \$579.6 million, up from \$577.6 million in 2004.

In upholding the University's and the School's mission of public service and engagement, SON researchers aim to improve the quality of life for citizens in North Carolina through their strong programs of research. The SON places a high value on its researchers and has created an infrastructure that enables

them to be successful in their endeavors.

The University of North Carolina at Chapel Hill's general culture of innovation, partnership and public service is highlighted through the departments, centers, offices and publications dedicated to furthering research opportunities. From new

research initiatives such as Carolina North, to the institutional support infrastructure outlined in the following pages, students and faculty continue to find a nurturing home for their ideas and innovations at the School of Nursing.

Join us as we take an in-depth look at the research infrastructure of the School of Nursing and the University at-large. The story of one of the world's leading nursing programs is weaved through the experiences and discoveries of SON students and faculty.



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33 Research Support Center

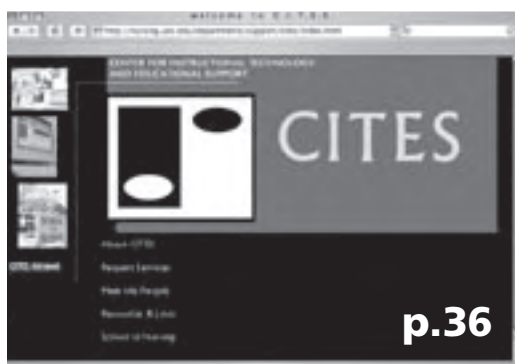
34 Center for Research on Chronic Illness

Center for Innovation in Health Disparities Research

35 Biobehavioral Laboratory

36 Center for Instructional Technology & Educational Support

University Research Resources



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Research Support Center

The School of Nursing's Research Support Center (RSC) was established in July 1985 to facilitate faculty research endeavors, with particular emphasis on expanding the research base in the School of Nursing, increasing external funding for faculty research, and developing new scholars and their programs of research.

To achieve these goals, the RSC and its expert consultants provide a broad array of research services to faculty, doctoral and post-doctoral students in the School of Nursing. Consultation

is provided on research development, design, methods, and measurement. Statistical services include consultation on advanced statistical techniques such as structural equation modeling, mixed models, longitudinal analyses, and analyses of complex data structures. Advice is also provided on analysis programming, results interpretation and presentation, and data management consultation.

One of the RSC's priorities is to assist with the development and preparation of grant proposals. The RSC regularly

announces new grant opportunities, works with the applicant on the development of the proposal, provides editorial assistance, conducts mock reviews, assists with budget development, prepares application forms, and handles institutional processing and submission of the application.

The RSC manages competitive intramural grant programs to provide seed monies to support new investigators, small studies and pilot projects in new areas of research. Such monies allow faculty to do the preliminary work needed to design larger, more complex studies that can be submitted for major funding.

The RSC houses a research reference library with key nursing journals, newsletters and books with funding information as well as books on research methods and statistics.

The Center offers educational opportunities such as research seminars and colloquia, as well as short courses on statistical and programming topics. Through a monthly newsletter, bulletin boards and weekly e-mails, the RSC keeps faculty and doctoral students informed of grant opportunities, upcoming conferences, and facilities and courses available outside the School of Nursing.



The Research Support Center is the first place SON nurse researchers turn to for assistance. Established in July 1985, the RSC facilitates faculty research endeavors, with particular emphasis on expanding the research base in the School of Nursing, increasing external funding for faculty research, and developing new scholars and their programs of research.

Pictured above, the Research Support Center staff from left to right: Todd Schwartz, statistician; Greg A. Workman, research administrator; Christine Crider, grants manager; Jim Vickers, writer; Katherine Emmett, assistant research administrator; and Lindsay Baird, office manager. Not pictured: Dr. Sandra Funk, director; John Carlson, statistician, Lung Chang Chien, statistical and computer lab assistant; Drs. Margarete Sandelowski and Barbara Mark, research consultants; and Elizabeth Tornquist, editorial consultant.

Focus on the RSC

- In 2004-2005, the SON ranked 4th among schools of nursing in annual research funding from the National Institutes of Health. The RSC provides a variety of services helping researchers obtain grants by announcing opportunities and assisting in grant development and preparation.
- When the RSC was established in July 1985, total outside funding for research amounted to \$22,000. In 2004-2005, total research funding exceeded \$9 million.
- The RSC Web site provides an extensive list of granting resources, health organization and nursing research journals.
- Various educational opportunities, such as seminars and short courses on statistical and programming topics, are offered through the RSC.

Sandra Funk, PhD

Professor and Associate Dean for Research
Director, Research Support Center
sfunk@email.unc.edu

Research Support Center

School of Nursing
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Phone (919) 966-5803
www.unc.edu/depts/rsc



Focus on CRCI

- The CRCI supports nursing research on the prevention and management of chronic illness in vulnerable people.
- CRCI supports both pilot and large-scale research studies and research utilization pilot studies.
- CRCI provides consultation to doctorally prepared nurses interested in writing post-doctoral NRSAs or Minority Supplements to the Center's supporting studies.
- CRCI's Web site provides investigators with a resourceful list of recent publications relating to various areas of study.

Center for Research on Chronic Illness
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nursing.unc.edu/crci



Focus on CIHDR

- CIHDR offers REAP (Research Enrichment and Apprenticeship Program), a mentorship experience for minority nursing students interested in research. REAP's long-term goal is to increase the number of racial and ethnic minority researchers in nursing.
- CIHDR develops strategic partnerships with community organizations in North Carolina such as El Centro Latino, El Centro Hispano and the University/Community Wellness Center.
- Culturally competent research at CIHDR encompasses cultural knowledge, sensitivity and collaboration.

Chris McQuiston, PhD, RN, FNP
Director, Center for Innovation in Health Disparities Research
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Center for Research on Chronic Illness

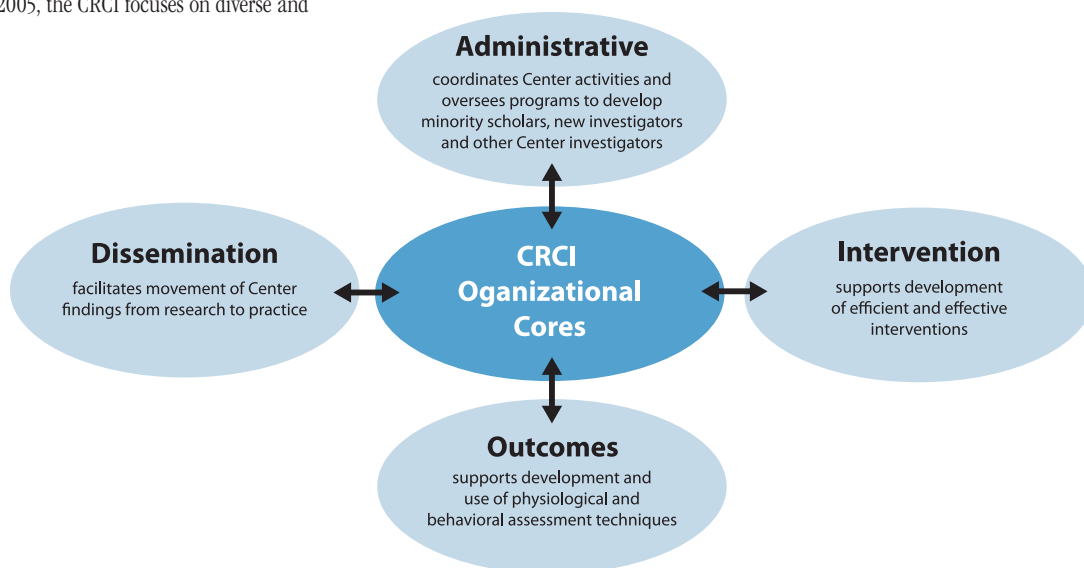
The School of Nursing's Center for Research on Chronic Illness (CRCI) encourages excellence in nursing research by supporting research on promoting health and reducing risky behaviors in vulnerable people and on assisting vulnerable people who are chronically ill to maximize their health. Funded by the National Institute of Nursing Research, National Institutes of Health, from 1994-2005, the CRCI focuses on diverse and

vulnerable populations and assists in developing minority nurse researchers.

A great deal of nursing research has described the prevalence and nature of chronic illness. CRCI helps investigators use this information to develop the theory-based interventions that are needed to improve health and function in people with chronic conditions, and to prevent chronic illnesses in vulnerable people.

Special emphasis is given to designing culturally sensitive measures and biobehavioral measures that assess the psychological, physiological and behavioral outcomes of the interventions.

To provide a broad range of support for new and experienced investigators studying chronic illness, CRCI is organized into four cores: administrative, intervention, outcomes and dissemination.



Center for Innovation in Health Disparities Research

The School of Nursing's Center for Innovation in Health Disparities Research (CIHDR) aims to increase the capacity for culturally competent nursing research, a mission it accomplishes by building sustainable academic and community partnerships.

At the core of CIHDR's success is the strategic partnership between UNC Chapel Hill and two of North Carolina's Historically Black Colleges and Universities: North Carolina Central University and Winston-Salem State University. CIHDR is funded by the National Institute of Nursing Research (<http://www.nih.gov/ninr/>) and the National Center for Minority Health and Health Disparities, National Institutes of Health (<http://ncmhd.nih.gov/>).

CIHDR mentors students and faculty, facilitates project and grant

development, develops and refines patient-centered research methodologies, and conducts seminars and workshops to discuss health disparities research.

CIHDR also develops partnerships with minority communities to improve community health, increase participation of minorities in research, and improve students' and researchers' understandings of issues related to minority health and disparities. The center has partnerships with organizations such as El Centro Latino, El Centro Hispano and the University/Community Wellness Center.

To provide a broad range of support for new and experienced health disparities researchers, CIHDR is organized into four cores: administrative, pilot/feasibility, mentoring and outreach/dissemination. Each core specializes in some area of research development.



The SON is home to both the Center for Research on Chronic Illness and the Center for Innovation in Health Disparities Research. Both centers encourage excellence in nursing research and supporting research that promotes health in vulnerable populations.

Pictured above from left to right: Greg Lewis, administrative assistant; Dr. Victoria Sanchez, research assistant professor; and Dr. Jean Goeppinger, professor.

Biobehavioral Laboratory

The School of Nursing's Biobehavioral Laboratory (BBL) aims to enhance knowledge and skills in biobehavioral science, physiological measurement and instrumentation. The term biobehavioral refers to the combination of biological and psychosocial factors that underlie individual responses to acute and chronic illness.

The BBL, established in 1989, emphasizes the use of non-invasive monitoring

and use of portable instrumentation, an approach which addresses the reality that many nurses work outside the hospital structure, in homes, community centers and other nursing care facilities. BBL staff are committed to assisting and promoting faculty and student efforts in the use of biobehavioral and physiological measures in their research.

The Biobehavioral Laboratory is a state-of-the-art facility which consists of a fully equipped two bedroom sleep/physiological recording area, a neuropsychological testing and interview area, a sample preparation and processing area, a genomic laboratory, and a computer laboratory with the latest equipment for behavioral analysis. Brant Nix, a bioengineer, manages the laboratory.

"The Biobehavioral Laboratory at the School of Nursing has become one of the major centers for developing innovative measurement techniques for studying the changing nature of chronic illness and effectiveness of nursing" said Virginia Neelon, associate professor and director of the Biobehavioral Laboratory.

"But the laboratory is more than research equipment and staff" says Neelon, "Over the years, we have helped faculty and students develop innovative, noninvasive ways to measure key



The BBL is home to a molecular genetics lab, which contains a thermal I-cycler for PCR and equipment for Western blots, mRNA isolation, fluorescent probe generation and hybridization.

variables that could potentially track changes in health status. We are now developing methods that concentrate on better understanding of "protective factors"—why a person with risk factors for a certain disease does not develop the disease or responds more positively to treatment," explains Neelon, "Perhaps, asking the question a little differently, will allow us to identify measures we can use to show not only that a nursing intervention works, but how it works.



The Biobehavioral Laboratory is a state-of-the-art facility featuring a fully equipped two bedroom sleep/physiological recording area.



The Biobehavioral Laboratory at the School of Nursing has become one of the major centers for developing innovative measurement techniques for studying the changing nature of chronic illness and effectiveness of nursing. From left to right: Brant Nix, Biobehavioral Laboratory manager; Dr. Virginia Neelon, Biobehavioral Laboratory director; and Dr. Barbara Wagg Carlson, Biobehavioral Laboratory associate director.

Focus on the BBL

- The BBL's lab research space tripled to 2,200 square feet following a \$650,000 renovation in 2000. The expansion included the addition of two sleep-study rooms and a biological lab with the capacity to prep, store, freeze and analyze samples.
- Because nurses often work outside the hospital structure, in homes, community centers, nursing homes and other external studies, the BBL addresses the need to build and adapt instruments that can be used almost anywhere and are minimally invasive to vulnerable individuals.
- BBL's Web site provides a detailed summary and a virtual map of all facilities and equipment, as well as an interactive teaching module for students and faculty involved in biobehavioral research.

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Focus on CITES

- CITES actively supports research at the school by providing consultation on the use of technology to facilitate research goals.
- CITES can assist with everything from designing and building grant Web sites and publishing public information about the grant, to creating more interactive Web-based tools that aid data collection and grant team collaboration.
- An interactive Web site allows faculty and researchers to request CITES services online.

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departments/support/cites/index.html](http://nursing.unc.edu/departments/support/cites/index.html)

Focus on University Research Resources

- As a cutting-edge research university, UNC Chapel Hill is home to 71 research centers and institutes that promote interdisciplinary research.
- The VCRED assists faculty in their research endeavors, encourages interdisciplinary activities across campus, and fosters programs that promote economic progress.
- In addition to the library of research publications available on the University's Web site, current research is also featured in *Endeavors*, a research magazine published three times a year.
- Learn more about the research resources of UNC Chapel Hill online at [http://
research.unc.edu/services/index.php](http://research.unc.edu/services/index.php).

Center for Instructional Technology and Educational Support

The School of Nursing's Center for Instructional Technology and Educational Support (CITES) assists the School and its researchers to push the frontiers of communication to maximize the exchange of knowledge.

CITES provides instructional technology assistance for faculty and researchers, collaborates with campus instructional technology support providers as needed, and provides a working environment for

design, consultation and development of instructional and presentation materials.

For example, CITES helps build Web-based software/applications that can help support the work of the researchers. This includes everything from designing and building grant Web sites and publishing public information about the grant, to creating more interactive Web-based tools that aid data collection and grant team collaboration.



University Research Resources

As a cutting-edge research university, the University of North Carolina at Chapel Hill provides a wonderfully rich and diverse environment within which to conduct research.

Sponsored funding for research at the University rose to \$579.6 million in fiscal year 2005, up from \$577.6 million in 2004. Leading this effort is the Vice Chancellor for Research and Economic Development (VCRED) Dr. Tony Waldrop, whose office assists faculty in their research endeavors, encourages interdisciplinary activities across campus, and fosters programs that promote economic progress.

The University is home to 71 researcher centers, institutes and initiatives that bring faculty together from across campus to collaborate in focused areas of research. Faculty, doctoral students, and post-doctoral fellows from the School of Nursing are active members of many of these centers, including the Carolina Center for Genome Sciences, the Cecil G. Sheps Center for Health Services Research, the Center for AIDS Research, the Center for Health Promotion and Disease Prevention, the Lineberger Comprehensive Cancer Center, the Institute on Aging and the Center for Ethnicity, Culture, and Health Outcomes.

Competitive intramural grant programs support faculty research projects, as does the National Institutes of Health-funded General Clinical Research

Center which provides inpatient and outpatient staff and facilities to assist in research. An outstanding library system with over 11 million volumes, microforms, and government publications provides on-line access to holdings and journals from office and home.

UNC Chapel Hill is currently planning the development of Carolina North, a learning community dedicated to the mission of innovation and public engagement. Carolina North will foster the formation of

partnerships with government, the private sector, and other research institutions, which will bring new fiscal and intellectual resources while creating numerous opportunities for faculty and students.

UNC Chapel Hill will also play an integral role in the newly announced North Carolina Research Campus in Kannapolis, proposing a nutrition research center which will focus primarily on nutrition and the brain, nutrition and cancer, and obesity.



Carolina North will be UNC's lab for new teaching and learning methods. It will help creatively transform and integrate the academic disciplines and professional schools.

FOCUS *on* Graduate Education

The University of North Carolina at Chapel Hill is a leading graduate research university offering 64 doctoral and 91 master's programs. Graduate students at the School of Nursing can select from six master's degree concentrations including adult nurse practitioner, healthcare systems, children's health, family nurse practitioner with a rural community-oriented primary care option, psychiatric mental health and women's health.

The doctoral degree program emphasizes two areas of scholarship. The first is the prevention and management of chronic health conditions across the lifespan. In this focus, of particular interest are populations at special risk for developing chronic health problems and for suffering more intense morbidity and early mortality because of them.

The second area of focus is directed at the preparation of researchers who will be able to develop, test and disseminate nursing knowledge to enhance the quality of care and improve patient outcomes. It is driven by recent reports from the Institute of Medicine (IOM) indicating that health care should be safe, effective, designed to meet patients' needs, timely, efficient and equitable. Because of nursing's critical role in providing health care, this focus .

The doctoral program emphasizes study of health conditions in varying biographical, cultural, historical, clinical, ethical/legal and organizational contexts; and, of practices to appraise health, improve health and prevent health problems, to evaluate the application of these practices in real-world settings across the continuum of care. Faculty mentors assist students in linking their clinical and research interests with the program emphasis.

The School's graduate programs strive to prepare competent, culturally sensitive, and compassionate scholars of nursing who will, through their active engagement with and passion for scholarship, contribute to the goal of a healthy nation and improve the quality of life of the citizens of North Carolina.

In the next few pages, you will follow three graduate students as they pursue their research interests and complete their doctoral degrees. The School of Nursing has provided them with the opportunity to receive an education while exploring their interests and contributing to health research.



**38 Graduate Student
Studies End-of-Life
Delirium**

*Stewart Bond,
MSN, MTS, RN, AOCN*

**39 NNP Returns to School to
Study Premature Infants**

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*Valerie Lunsford,
MSN, BSN RN*



Stewart Bond
MSN, MTS, RN, AOCN
PhD Student

As an oncology and hospice nurse, I became keenly aware of the distress that delirium causes acutely ill and dying cancer patients, their family members and professional caregivers," said SON doctoral student Stewart Bond.

Bond's research, under the direction of Dr. Virginia Neelon, associate professor and director of the Biobehavioral Laboratory, focuses on the care of older adults with advanced cancer, specifically, on the prevention and management of delirium or acute confusion, and other neurocognitive changes associated with cancer and its treatment.

Programs of research:

Prevention and management of delirium in older adults with advanced cancer

Education:

PhD Student, University of North Carolina at Chapel Hill, Chapel Hill, NC

Post-Master's, Certificate in Psychiatric-Mental Health Nursing, Vanderbilt University, Nashville, TN

MTS, Pastoral Care, Counseling and Ethics, Vanderbilt University Divinity School, Nashville, TN

MSN, Nursing, University of North Carolina at Chapel Hill, Chapel Hill, NC

BSN, Nursing, University of Virginia, Charlottesville, VA

Career Goal:

To work in an academic setting teaching and conducting research in geriatric oncology and palliative care.

Graduate Student Studies End-of-Life Delirium

Stewart Bond, MSN, MTS, RN, AOCN
By Katie Joyner

"The resources in the School of Nursing and the University provide a rich environment to support my education and research training," said Stewart Bond, a doctoral student at the SON since 1999.

Bond said he chose to pursue his doctorate at UNC Chapel Hill because of the strength of its faculty and research programs, and its emphasis on the preparation of nurse scientists to conduct clinical nursing research.

"More importantly," Bond said, "the focus of the nursing doctoral program on chronic illness in vulnerable populations fit well with my clinical and research interests."

Bond's research, under the direction of Dr. Virginia Neelon, PhD, RN, associate professor and director of the Biobehavioral Laboratory, focuses on the care of older adults with advanced cancer, specifically, on the prevention and management of delirium or acute confusion, and other neurocognitive changes associated with cancer and its treatment.

"As an oncology and hospice nurse, I became keenly aware of the distress that delirium causes acutely ill and dying cancer patients, their family members and professional caregivers," Bond said. "Cancer and

cancer deaths are predominant in older persons who are already at high risk for delirium. However, delirium has not been studied in older cancer patients."

Through the doctoral program, Bond is developing the knowledge and skills necessary to conduct research to understand better delirium and the associated factors influencing its prevention and treatment.

"The appropriate and effective management of delirium at the end of life will enhance the quality of living and dying for older cancer patients and minimize distress for their caregivers," said Bond.

Bond is currently collecting data for the last phase of his three-phase research study. A paper of findings from the first phase, presented at the UNC Aging Exchange in 2004, won a recognition award. In addition, poster presentations at the 16th and 17th Annual Conferences of the Southern Nursing Research Society won Graduate Student Poster Awards.

Preliminary study findings suggest that delirium is a common problem among hospitalized older adults with cancer. "More than half of the patients exhibited delirium at some point during their hospitalization," said Bond.

Bond's research also reveals that delir-

ium in hospitalized older adults is associated with potentially correctable etiologic factors and patterns including hypoxia, metabolic alterations and nutritional impairment. And, the high frequency of delirium among older cancer patients at hospital discharge has significant implications for post-hospital care and recovery.

"The School of Nursing has been extremely supportive throughout my research," said Bond. "The School has an array of resources that supported my academic achievement and research training including the Research Support Center, the Biobehavioral Laboratory, the Center of Instructional Technology and Educational Support and the Center for Research on Chronic Illness."

Bond's doctoral education and research has been funded by intramural and extramural awards. He was a predoctoral trainee in the School of Nursing's Institutional NRSA (T32) that focuses on the prevention and management of chronic illness. He also received grants from the John A. Hartford Foundation's Building Academic Geriatric Nursing Capacity Program and the American Cancer Society.

MENTORSHIP

SON faculty serve as mentors to undergraduate and graduate students.

For undergraduates, faculty mentors can provide the guidance and support for students interested in exploring various fields in nursing. Unique opportunities exist for undergraduate students at the SON who wish to learn more about careers in research. For example, the SON's Center for Innovation in Health Disparities Research offers the Research Enrichment and Apprenticeship Program or REAP.

REAP aims to enrich the research experience of minority nursing by partnering undergraduate and masters nursing students with faculty from UNC Chapel Hill, Winston Salem State University and North Carolina Central University. With guidance from mentors, students design and conduct their own small research projects.

For graduate students, particularly those pursuing

doctoral degrees, faculty mentors play a key role in their education. Mentors and students are matched up at the beginning of a program based on several criteria including common program areas and research interests.

In addition to providing ongoing advising, mentors assist students with career planning. They teach and guide students through the research process with the goal of providing them with the knowledge and skills to find gainful employment or to continue in their research endeavors. Mentors often provide students with encouragement and support beyond academic issues, and serve as role models in their areas of nursing.

NNP Returns to School to Study Premature Infants

Robin B. Knobel, RNC, MSN, NNP

By Katie Joyner

After 24 years of working with premature infants, Robin B. Knobel, RNC, MSN, NNP, realized the importance of body temperature stabilization. She has returned to school to study the effects of body temperature regulation in premature infants while pursuing her PhD.

"UNC Chapel Hill SON has a very good reputation for nursing research," said Knobel whose years of experience showed her that premature infants are often cold, even though their environments are controlled.

"Little information is available to nurses on how warm we should try to keep these fragile infants," Knobel said. "If we fail to keep these tiny infants warm, a cold body temperature can result in decompensation and sometimes long-term ill effects or even death."

Knobel's research interests include premature infants, mostly those weighing less than 1000 grams, and their body temperature control in the first few days of life. Her first study, "Polyurethane wrap to reduce hypothermia in preterm infants after birth," evaluated the use of polyurethane bags to keep infants less than 29 weeks gestation warm in the delivery room while the neonatal team stabilized the baby. Knobel chose polyurethane bags because they are available in delivery rooms and have already been used to pro-

tect infants with abdominal wall defects

The infant was placed in the bag immediately after delivery while still wet up to their neck. Once the infant arrived in the NICU, the bag was removed and their body temperature taken. "The bags resulted in significant improvement in body temperature for the infants when they were admitted to the NICU," Knobel said.

Knobel's second study, "Survey of delivery room practices: Using occlusive wrapping for heat loss prevention in pre-term infants," was an Internet survey of NICUs across the country to see how many were already using bags or other wraps in the delivery room to keep extremely low birth weight (ELBW) infants warm.

"The survey showed that some NICUs had already adopted the procedure, but had not used the bag recommended by researchers, and often times used their own devices," said Knobel, who believes the study shows the need for more widespread dissemination of the intervention protocol.

Knobel is currently conducting her dissertation, which examines the body temperature in 10 ELBW infants during the first 12 hours of life to see how their temperatures affect oxygen-

ation, acidosis, glucose, peripheral vasoconstriction and heart rate.

Knobel has published articles on the first two studies in the *Journal of Perinatology* and presented several papers and posters on all three studies. She shared her research with an international audience in January when she traveled to Thailand to present her dissertation findings at a nursing conference.

Knobel has been able to pursue her education and research with support from a T-32 Pre-doctoral fellowship, "Interventions to Prevent and Manage Chronic Illness," along with an individual National Research Service Award from the National Institute of Nursing Research, National Institutes of Health. Knobel also received scholarship and grant funding from the American Nurses Foundation and the Foundation of Neonatal Research and Education.

"I have found a support network at the SON through my professors, the Research Support Center and the Center for Instructional Technology and Educational Support," said Knobel. "My advisor and mentor, Dr. Diane Holditch-Davis, has encouraged me and supported my stubborn independence!"

"I would encourage students interested in graduate studies to attend UNC Chapel Hill SON because of the incredible faculty and the abundance of research support," Knobel said. "The campus is beautiful and allows you to feel bathed in a professional, academic world."



Robin B. Knobel
RNC, MSN, NNP
PhD Student

Teaching fellow Robin B. Knobel, RNC, NNP, returned to school to study the effects of body temperature regulation in premature infants.

After 24 years of working with premature infants, Knobel said she began to realize the importance of body temperature stabilization. "If we fail to keep these tiny infants warm, a cold body temperature can result in decompensation and sometimes long-term ill effects or even death," said Knobel.

Programs of research:

Body temperature control in premature infants

Education:

PhD Student, University of North Carolina at Chapel Hill, Chapel Hill, NC

MS, Nursing, East Carolina University, Greenville, NC

ADN, University of Nevada, Las Vegas, NV

Career Goals:

To find a faculty job that combines NNP practice, research and teaching and to be involved in international nursing research.



Valerie Lunsford
MSN, BSN, RN
PhD Student

Lunsford came in the SON in 1997 to pursue her research interests, which include women with cardiovascular disease, the processes of behavioral change over time and physical activity.

Programs of research:

Women's initiation of physical activity after a cardiac event

Education:

PhD Student, University of North Carolina at Chapel Hill, Chapel Hill, NC

MSN, University of Texas Health Science Center at San Antonio, San Antonio, TX

BSN, University of Texas at San Antonio, San Antonio, TX

Career Goals:

Nurse researcher, educator and mentor

Doctoral Student Examines Physical Activity in Women After a Cardiac Event

Valerie Lunsford, MSN, BSN, RN

By Katie Joyner

"Women experience a lot of changes in their levels of confidence and their emotional states after having a cardiac event," said Valerie Lunsford, doctoral student and teaching fellow.

Lunsford, who has worked for 12 years as a critical care nurse, said there is a significant lack of research concerning women and cardiovascular disease. "I felt that I could contribute to that body of knowledge while working with a group I really enjoyed and effectively combining my clinical and educational backgrounds," Lunsford said.

Lunsford came in the SON in 1997 to pursue her research interests, which include women with cardiovascular disease, the processes of behavioral change over time and physical activity.

"I was always impressed with the quality of research at UNC and decided that it was where I wanted to obtain a PhD. I have received a tremendous amount of financial support from the SON, including annual scholarship

funds, a merit assistantship and two years of T32 support," said Lunsford.

Currently, Lunsford is conducting her dissertation study, which examines women's initiation of a more physically active lifestyle after a cardiac event. Her research explores the processes and temporal patterning of contextual factors and behavior change processes involved in the initiation and early adoption of varying levels of physical activity while attending a formal Phase II cardiac rehabilitation program.

"Much research has measured these concepts at a single point in time, but my longitudinal assessment is revealing quite a bit of variability," Lunsford said. "I am constantly amazed by the strength, resilience, commitment and optimism of these women regardless of age, disease severity or comorbidities. They continue to live life to the fullest."

Lunsford feels that her years at the SON have prepared her for what lies ahead. "I have come to realize that through my work as a teaching fellow

and doctoral candidate, I have already been involved in multiple facets of the faculty role, including teaching, research and committee service," Lunsford said.

"Upon graduation, in addition to having a degree from the SON, I will have been socialized to the faculty role, which will be a valuable combination for my future as a nurse researcher, educator and faculty member."

Lunsford said the SON offers many resources to assist students financially, educationally, and with career goals and "excellent opportunities to learn from and work with internationally recognized nurse leaders and researchers."

"Through the Research Support Center, The Center for Research on Chronic Illness, and the Center for Innovation in Health Disparities Research, the SON can support the study in areas varying from healthcare systems, physiology, biobehavioral interactions and psychosocial processes, all significant components of nursing research," Lunsford said.

Fellowships and Funding

Graduate education can be timely and expensive. Students are encouraged to explore the options and opportunities for financial aid from the University and the School of Nursing.

Full-time students in the SON's master's or doctoral program may be eligible for both merit-based and need-based financial aid. The University's Office of Scholarships and Student Aid administers need-based aid. Nursing students are eligible for scholarships and loans on the same basis as all other graduate students at the University.

Students also are encouraged to seek financial aid through their local communities and through scholarships available from sources outside the University including employers; fraternal, civic and professional organizations; and military services.

Awards administered by the SON are merit-based and include scholarships, assistantships, and fellowships. Six full awards are made to new PhD students for the first two years of study.

In addition, the SON is home to two T32 (Institutional National Research Service Award) grants from the National

Institute of Nursing Research, National Institutes of Health, which grant two to three years of funding to support doctoral students during their studies. Students are also encouraged to apply to extramural sources for support, including individual NRSA's, R03s, and dissertation grants from foundations.

Employment opportunities are also available to graduate students in the SON as teaching or research assistants. Both types of assistantships provide valuable learning experiences. Once admitted, students are notified of employment opportunities as they become available.

Dissertation research support is available from both the School and the University to help defray the expenses of dissertation research. Doctoral students planning to begin their dissertation should investigate direct and indirect funding opportunities through their departments, the Office of Academic Affairs, the Research Support Center and other research centers on and off campus.

Visit the SON online at <http://nursing.unc.edu/admissions/index.html> for more information.

Faculty Research Grants 2004–2005 Academic Year

ARTHRITIS

Goeppinger, J., Principal Investigator; **Brown, D.**, Consultant. *Mail-Delivered Arthritis Self-Management Education*. Centers for Disease Control and Prevention, 2004-2006.

Goeppinger, J., Principal Investigator; **Schwartz, T.**, Statistician. *Comparing ASHC and CDSMP Outcomes in Arthritis*. Centers for Disease Control and Prevention, 2002-2004.

CANCER

Mishel, M., Principal Investigator; **Germine, B.**, Co-Principal Investigator; **Beeber, L.**, **Belyea, M.**, **Gollop, C.**, & **Mohler, J.**, Co-Investigators. *Decision Making Under Uncertainty in Prostate Cancer*. National Institute of Nursing Research, National Institutes of Health, 2002-2006.

Mishel, M., Principal Investigator; **Germine, B.**, Co-Principal Investigator; **Gil, K.**, **Carlton-LaNey, I.**, & **Belyea, M.**, Co-Investigators. *Managing Uncertainty in Older Breast Cancer Survivors*. National Cancer Institute, National Institutes of Health, 1999-2005.

Mishel, M., Principal Investigator; **Mohler, J.**, Consortium Director. *Cultural and Demographic Predictors of Interaction with the Health Care System and Prostate Cancer Aggressiveness*. School of Medicine, University of North Carolina at Chapel Hill, Department of Defense, 2003-2006.

Mishel, M., Co-Investigator; **Smith, S.**, Principal Investigator. *Quality of Life of Older Long-term Lymphoma Survivors*. National Cancer Institute, National Institutes of Health, 2004-2006.

CARDIOVASCULAR DISEASE

Brown, D., Principal Investigator; **Clarke, M.**, & **Light, K.**, Co-Investigators; **Skelly, A.**, Advisor. *Stress and Cardiovascular Responses in Black Men*. Program on Ethnicity, Culture, and Health Outcomes, The University of North Carolina at Chapel Hill, 2004-2005.

Brown, D., Principal Investigator; **Light, K.**, Co-Investigator. *Perceived Stress, Cortisol and Cardiovascular Responses During Sleep in Black Women*. Center for Research on Preventing/Managing Chronic Illness in Vulnerable People, School of Nursing, The University of North Carolina at Chapel Hill, National Institute of Nursing Research, National Institutes of Health, 2003-2005.

Brown, D., Principal Investigator. *Perceived Stress, Cortisol and Cardiovascular Response During Sleep in Black Women and Stress and Cardiovascular Responses in Black Men*. Faculty Research Opportunity Grant, School of Nursing, The University of North Carolina at Chapel Hill, 2005-2006.

Brown, D., Principal Investigator. *Perceived Stress, Cortisol and Cardiovascular Response During Sleep in Black Women and Stress and Cardiovascular Responses in Black Men*. Summer Research Award, School of Nursing, The University of North Carolina at Chapel Hill, 2005-2006.

Harrell, J., Principal Investigator; **McMurray, R.**, **Bangdiwala, K.**, & **Davenport, M.**, Co-Investigators. *Cardiovascular Health in Children and Youth (CHIC III)*. National Institute of Nursing Research, National Institutes of Health, 2000-2006.

CHRONIC ILLNESS

Dieckmann, J., Principal Investigator; **Hall, J.** & **Rasin, J.**, Co-Investigators. *Nursing Care for the Chronically Ill: An Oral History of Nurses and Nursing Assistants, 1950-1970*. Center for Research on Preventing/Managing Chronic Illness in Vulnerable People, School of Nursing, The University of North Carolina at Chapel Hill, National Institute of Nursing Research, National Institutes of Health, 2002-2004.

Holditch-Davis, D., Principal Investigator; **Funk, S.**, Co-Principal Investigator; **Mishel, M.**, & **Dougherty, M.**, Core Directors. *Preventing/Managing Chronic Illness in Vulnerable People*. National Institute of Nursing Research, National Institutes of Health, 1994-2005.

DEPRESSION

Beeber, L., Principal Investigator; **Canuso, R.**, **Holditch-Davis, D.**, **Mishel, M.**, & **Schwartz, T.**, Co-Investigators. *Reducing Depressive Symptoms in Low-Income Mothers*. National Institute of Mental Health, National Institutes of Health, 2003-2008.

Beeber, L., Principal Investigator; **Holditch-Davis, D.**, **Perreira, K.**, & **Schwartz, T.**, Co-Investigators. *EHS Latino Mothers: Reducing Depression and Improving Infant/Toddler Mental Health*. Department of Health and Human Services Administration for Children, Youth, and Families, 2002-2006.

DIABETES

Harrell, J., Principal Investigator; **McMurray, R.**, **Bangdiwala, S.**, **Hackney, A.**, **Chapman, J.**, **Vu, M.**, & **West, V.**, Co-Investigators. *Physical Activity in Youth -- Preventing Type 2 Diabetes (STOPP-T2D)*. National Institute of Diabetes & Digestive & Kidney Diseases, National Institutes of Health, 2002-2009.

Harrell, J., Site Principal Investigator. *Computer-Based Intervention for Type 2 Diabetes in Youth*. Archimage, National Institute of Diabetes & Digestive & Kidney Diseases, National Institutes of Health, 2003-2006.

Skelly, A., Principal Investigator; **Burns, D.**, **Carlson, J.**, **Biddle, A.**, & **Leeman, J.**, Co-Investigators. *Symptom Focused Diabetes Care for African-American Women*. National Institute of Nursing Research, National Institutes of Health, 2003-2007.

ELDERS

Carlson, B., Principal Investigator; **Neelon, V.**, **Hartman, M.**, **Dogra, S.**, & **Carlson, J.**, Co-Investigators. *Respiratory Periodicity and Cognitive Decline in Elders*. National Institute of Nursing Research, National Institutes of Health, 2002-2006.

Carlson, B., Principal Investigator; **Neelon, V.**, **Carlson, J.**, & **Rowsey, P.**, Co-Investigators. *Core Body Temperature Rhythm, Cytokines and Respiratory Periodicity During Sleep in Older Adults with and Without Age-Associated Memory Impairment*. Center for Research on Preventing/Managing Chronic Illness in Vulnerable People, School of Nursing, The University of North Carolina at Chapel Hill, National Institute of Nursing Research, National Institutes of Health, 2002-2004.

Carlson, B. W., Principal Investigator; **Carlson, J.**, Co-investigator. *Temperature Patterns, Cytokines, and Oxygenation during Sleep in Older Adults: Phase II*. The Institute on Aging, The University of North Carolina at Chapel Hill, 2005.

Carlson, B. W., Principal Investigator; **Carlson, J.**, Co-investigator. *Bispectral Index and Sleep States in Older Adults*. The Institute on Aging, The University of North Carolina at Chapel Hill, 2005.

Eaves, Y., Principal Investigator; **Dilworth-Anderson, P.** & **Palmer, M.**, Co-Sponsors; **Carlson, J.**, Statistician. *A Caregiving Intervention for Rural African Americans*. National Institute on Aging, National Institutes of Health, 2005-2010.

Palmer, M., Site Principal Investigator & Co-Investigator; **Baumgarten, M.**, Principal Investigator. *Locus of Care and Pressure Ulcers After Hip Fracture*. University of Maryland, National Institute of Arthritis and Musculoskeletal and Skin Diseases, National Institutes of Health, 2002-2005.

GENETICS

Thoyre, S. & **Van Riper, M.**, Co-Principal Investigators. *Feeding issues for children with Down Syndrome and their families*. Center for Research on Preventing/Managing Chronic Illness in Vulnerable People, School of Nursing, The University of North Carolina at Chapel Hill, National Institute of Nursing Research, National Institutes of Health, 2002-2004.

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Van Riper, M., Co-Principal Investigator; **Bailey, D.**, Principal Investigator. *ELSI scale-up: Large sample gene discovery and disclosure*. The Ethical, Legal, and Social Implications Research Program, National Human Genome Research Institute, National Institutes of Health, 2004-2006.

Van Riper, M., Principal Investigator. *Minority families being screened for and living with genetic conditions*. Center for Innovations in Health Disparities Research, School of Nursing, The University of North Carolina at Chapel Hill, National Institute of Nursing Research, National Institutes of Health, 2003-2005.

Van Riper, M., Principal Investigator. *Families making sense of and using genetic testing results*. Faculty Research Opportunity Grant, School of Nursing, The University of North Carolina at Chapel Hill, 2004-2005.

HEALTH DISPARITIES

Esposito, N., Principal Investigator; **Canzona, C.**, Co-Investigator. *Experiencing Discrimination: Instrument Development*. Center for Innovation in Health Disparities Research, School of Nursing, The University of North Carolina at Chapel Hill, National Institute of Nursing Research, National Institutes of Health, 2002-2004.

McQuiston, C., Principal Investigator; **Dennis, B.**, **Flack, S.**, Co-Principal Investigators; **Miles, M.**, **Rowsey, P.**, **Goeppinger, J.**, & **Eaves, Y.**, Core Directors. *Center for Innovation in Health Disparities Research*. National Institute of Nursing Research, National Institutes of Health, 2002-2007.

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Fogel, C., Principal Investigator; **Adimora, A.**, **Belyea, M.**, **Campbell, J.**, **Fishel, A.**, **Kaplan, A.**, **Shain, L.**, & **Stephenson, B.**, Co-Investigators. *Helping Women Prisoners Reduce HIV Risk After Release*. National Institute of Mental Health, National Institutes of Health, 2003-2008.

Fogel, C., Co-Investigator; Wohl, D., Principal Investigator. *HIV+Releasees' Access to HIV Care and Services*. National Institute on Drug Abuse, National Institutes of Health, 2003-2008.

McQuiston, C., Principal Investigator; Parrado, E., Co-Investigator. *Gender, Migration, and HIV Risks Among Mexicans*. National Institute of Nursing Research, National Institutes of Health, 2001-2005.

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Kincade, J., Principal Investigator; **Dougherty, M.**, Co-Principal Investigator; **Carlson, J.**, Co-Investigator and Statistician; Busby-Whitehead, J. & Wells, E., Co-Investigators. *Efficacy of Biofeedback to Treat UI in Women*. National Institute of Nursing Research, National Institutes of Health, 2000-2004.

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INFANTS AND CHILDREN

Brunssen, S., Principal Investigator. *Exploring the effects of perinatal exposure to Hyper-Interleukin-6 on developmental regulation of neurotransmitter receptors in the mouse cerebral cortex*. University Research Council, The University of North Carolina at Chapel Hill, 2005-2007.

Brunssen, S., Principal Investigator; Moy, S., & Toews, A., Co-Investigators; Harry, J., Collaborating Investigator. *Developmental outcomes of perinatal IL-6 exposure in the CD-1 mouse*. Center for Research on Preventing/Managing Chronic Illness in Vulnerable People, School of Nursing, The University of North Carolina at Chapel Hill, National Institute of Nursing Research, National Institutes of Health, 2004-2005.

Holditch-Davis, D., Principal Investigator; **Miles, M.**, Co-Principal Investigator; **Beeber, L.** & **Thoyre, S.**, Co-Investigators; **Belyea, M.**, Statistical Investigator; Pedersen, C., & Biddle, A., Consulting Investigators; Hubbard, C., & Wereszczak, J., Clinical Investigators. *Nursing Support Intervention for Mothers of Pre-matures*. National Institute of Nursing Research, National Institutes of Health, 2001-2006.

Thoyre, S., Principal Investigator; **Holditch-Davis, D.**, Sponsor; **Carlson, J.**, Statistical Investigator; Veness-Meehan, K., Consulting Investigator. *Contingent Feeding of Preterms to Reduce Hypoxemia*. National Institute of Nursing Research, National Institutes of Health, 2002-2005.

Thoyre, S., Principal Investigator. *Decreasing the Effect of Variability in a Test of Contingent Feeding for Preterm Infants*. Faculty Research Opportunity Grant, School of Nursing, The University of North Carolina at Chapel Hill, 2002-2005.

NURSING SYSTEMS AND OUTCOMES

Foley, B., Principal Investigator; **Bingham, M.**, Kee, C., Minick, P. & Harvey, S., Co-Investigators; **Schwartz, T.**, Statistician. *Nursing Processes and Patient Outcomes in U.S. Army Hospitals*. TriService Nursing Research Program, 2002-2005.

Havens, D., Principal Investigator. *Building Hospital Capacity for Better Work and Better Care*. Health Resources and Services Administration, 2004-2009.

Hughes, L., Principal Investigator. *Development of Psychometric Properties of Four Instruments to Measure Hospital Nurses' Use of Discretion*. Faculty Research Opportunity Grant, Sarah Frances Russell Professorship Funds, School of Nursing, The University of North Carolina at Chapel Hill, 2003-2004.

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Jones, C., Principal Investigator; **Mark, B.**, Co-Investigator. *The Intersection of Nursing and Health Services Research*. Agency for Healthcare Research and Quality, 2003-2006.

Jones, C., Principal Investigator; **Mark, B.**, **Belyea, M.**, & **Gates, M.**, Co-Investigators. *Differential Nursing Employment Patterns: A Region IV Analysis of Race and Ethnicity*. Southeastern Regional Center for Health Workforce Studies, Cecil G. Sheps Center for Health Services Research, The University of North Carolina at Chapel Hill, Health Resources and Services Administration, 2003-2006.

Jones, C., Co-Investigator; McGillis Hall, L., Principal Investigator. *An Understanding of Canadian-Trained Nurses in the U.S.* Ontario Ministry of Health and Long Term Care, 2004-2006.

Jones, C., Co-Investigator; O'Brien-Pallas, L., Principal Investigator. *Understanding the Costs and Outcomes of Nurses' Turnover: An International Study (Canada, Australia, New Zealand, U.K.)*. Canadian Health Services Research Foundation, 2003-2006.

Lynn, M., Principal Investigator; **Mark, B.**, Nursing Systems Analyst; Bollen, K., SEM Analyst; Morgan, J., Data Analyst. *Testing a Model of Quality Care in Home Health*. National Institute of Nursing Research, National Institutes of Health, 2002-2007.

Mark, B., Principal Investigator; Berman, W., & Harless, D., Co-Investigators. *Nurse Staffing, Financial Performance, and Quality Care*. Agency for Healthcare Research and Quality, 1999-2005.

Mark, B., Principal Investigator; **Jones, C.**, Eck, S., & **Belyea, M.**, Investigators. *A Model of Patient and Nursing Administration Outcomes*. National Institute of Nursing Research, National Institutes of Health, 1995-2007.

Mark, B., Co-Director; Ricketts, T., Principal Investigator & Director. *Regional Center for Health Workforce Studies*. Health Resources and Services Administration, 2000-2006.

Mark, B., Co-Sponsor; Radwin, L., Principal Investigator. *Testing a Quality Health Outcomes Model in Cancer Care*. University of Massachusetts at Boston, Agency for Healthcare Research and Quality, 2001-2006.

RESEARCH SYNTHESIS

Sandelowski, M., Principal Investigator; Barroso, J. & Voils, C., Co-Principal Investigators. *Integrating Qualitative & Quantitative Research Findings*. National Institute of Nursing Research, National Institutes of Health, 2005-2010.

Sandelowski, M., Principal Investigator; Barroso, J., Co-Principal Investigator; Gollop, C., Co-Investigator. *Analytic Techniques for Qualitative Metasynthesis*. National Institute of Nursing Research, National Institutes of Health, 2000-2005.

RESEARCH TRAINING

Mark, B., Principal Investigator; Leatt, P. & Carey, T., Co-Investigators. *Research Training Health Care Quality & Patient Outcomes*. Institutional National Research Service Award, National Institute of Nursing Research, National Institutes of Health, 2004-2009.

Mishel, M., Principal Investigator; **Holditch-Davis, D.**, Co-Principal Investigator. *Interventions for Preventing and Managing Chronic Illness*. Institutional National Research Service Award, National Institute of Nursing Research, National Institutes of Health, 1996-2006.

RESEARCH TRANSLATION

Leeman, J., Principal Investigator; **Skelly, A.** & Soltys-Jarrett, V., Co-Investigators. *Translating Diabetes Research Findings to Improve Practice*. Center for Innovation in Health Disparities Research, School of Nursing, The University of North Carolina at Chapel Hill. National Institute of Nursing Research, National Institutes of Health, 2004-2005.

Leeman, J., Co-Investigator; Ammerman, A., Principal Investigator. *Center of Excellence in Training and Translation for the Wisewoman and Obesity Prevention Programs*. Centers for Disease Control and Prevention, 2004-2009.

Mazzocco, G., Co-Investigator; Johnson, P., Principal Investigator. *Building an Evidence-Based Transition to Practice*. Agency for Healthcare Research and Quality, 2005.

SMOKING CESSATION

Pletsch, P., Principal Investigator; **Schwartz T.**, Biostatistician. *A Smoking Resumption-Prevention Intervention for Pregnant and Postpartum Women*. Robert Wood Johnson Foundation, 2005-2007.

Pletsch, P., Principal Investigator. *Taste Changes and the Smoking Cessation Experience of Spontaneous Quitters: Informing the Next Generation of Cessation Interventions for Pregnant Women*. Center for Research on Preventing/Managing Chronic Illness in Vulnerable People, School of Nursing, The University of North Carolina at Chapel Hill, National Institute of Nursing Research, National Institutes of Health, 2002-2004.

Pletsch, P., Principal Investigator. *The Relationship of Estradiol, Prolactin, and Human Chorionic Gonadotropin to Women's Aversion to Tobacco Smoke During Pregnancy*. Summer Research Award, School of Nursing, The University of North Carolina at Chapel Hill, 2005-2006.

Pletsch, P., Site Principal Investigator & Co-Investigator. *Testing Pharmacological Therapies for Pregnant Smokers*. Duke University, National Cancer Institute, National Institutes of Health, 2003-2005.

THERMOREGULATION

Rowsey, P.J., Principal Investigator. *Beneficial Effects of Exercise on Health and Disease*. National Institute of Nursing Research, National Institutes of Health, 1999-2005.

Educational and Professional Grants and Activities 2004–2005 Academic Year

Barlow, J., Principal Investigator. *Early Intervention for Hospitalized Children*. The Duke Endowment, 2003-2005.

Barlow, J., Principal Investigator. *Community Transition Coordination/Discharge Planning*. NC Department of Health and Natural Resources, Division of Maternal and Child Health Section, 2004-2005.

Barlow, J., Principal Investigator. *Pre-maturity Awareness Initiative for Parents of Hospitalized Children*. March of Dimes, 2005-2006.

Beeber, L., Principal Investigator. *Psych. NP: Meeting the Needs of the Underserved in NC*. Bureau of Health Professions, Health Resources and Services Administration, 2004-2007.

Cronenwett, L. R., Project Director; **Gillis, C.**, Co-Project Director. *Duke/Carolina Visiting Professorship in Geriatric Nursing*. Blue Cross/Blue Shield of North Carolina, 2004-2010.

Durham, C., Principal Investigator. *ANA Safe Patient Handling Curriculum Module Pilot-Test Project*. American Nurses Association, 2005-2006.

Foster, B., Principal Investigator. *PRIDE in Nursing*. Bureau of Health Professions Health Resources and Services Administration, 2004-2007.

Halloran, E., Principal Investigator. *Hospitals in China and America: Common Beginnings and Different Paths*. China Medical Board of New York, 2005.

Harlan, C., Principal Investigator; **Dieckmann, J.**, Co-Investigator. *¡HOLA-NC! Health Opportunities for Latino Awareness in Nursing Curricula*. AHEC grant for development of new clinical training sites for nursing, 2004-2005.

Hawthorne, N., Principal Investigator. *Grand Rounds: Female Urinary Incontinence*. Lilly Grant Office, 2004.

Henderson, M., Principal Investigator. *Transitions: A New Model of Care for Frail Elderly Facing the Final Phase of Life*. Warner Dannheisser Testamentary Trust, 2002-2004.

Jones, C., Principal Investigator; **Boyington, A.**, Investigator. *Addressing the Nursing Faculty Shortage through Distance Nursing Education*. Office of the Provost, The University of North Carolina, 2005-2006.

Kjervik, D., Co-Project Director; **Lisker, D.**, Project Director. *Vote, Run, Lead*. Robertson Scholars Collaborative Fund, UNC-Chapel Hill/Duke University, 2004-2005.

Kjervik, D., Project Director. *Safety Information Access for Everyone (SAFE)*. Carolina Parent Council Spring Grant Award, 2005-2006.

Lamana, B., Principal Investigator. *Learning Together: Public Health Nursing in Real Time and Place*. AHEC, 2004-2005.

Miles, M., Director of Training Program for School of Nursing. *Curriculum Development Award*. University Center for International Studies, The University of North Carolina at Chapel Hill, U.S. Department of Education P015A030070, 2003-2006.

Miller, M., Project Director. *Advanced Education Nurse Traineeship*. Bureau of Health Professions Health Resources and Services Administration, 2004-2005.

Miller, M., Project Director. *Helen Fuld Undergraduate Scholarship Proposal*. Helen Fuld Health Trust, 2003-2006.

Miller, M., Project Director. *Nurse Faculty Loan Program*. Bureau of Health Professions Health Resources and Services Administration, 2004-2005.

Oppewal, S., Principal Investigator. *Nursing Student Summer Externships in Rural and Underserved Settings*. Kate B. Reynolds Charitable Trust, 2005-2007.

Palmer, M., Principal Investigator. *Improving the Nursing Care of Acutely Ill Elders*. Division of Nursing, Health Resources and Services Administration, 2003-2006.

Powell, W., Principal Investigator. *Faculty Curriculum Development Award*. University Center for International Studies, The University of North Carolina at Chapel Hill, 2004-2005.

Smith, E., Principal Investigator; **Foley, B.**, and **Lynn, M.**, Co-Investigators. *Evaluating the Effectiveness of a Certificate in Clinical Leadership Program on the Performance of Nurse Managers*. American Organization of Nurse Executives (AONE) Institute for Patient Care Research and Education, 2004-2005.

Faculty Publications 2004–2005 Academic Year

Barlow, Jane, *Clinical Instructor*

Freund, P. J., Boone, H. A., Barlow, J. H., & Ing Lim, C. (2005). Health care and early intervention collaborative supports for families and young children. *Infants and Young Children*, 18(1), 25-36.

Beeber, Linda, *Professor*

Beeber, L. S., Canuso, R., & Emory, S. (2004). Instrumental inputs: Moving interpersonal theory into practice. *ANS: Advances in Nursing Science*, 27, 275-286.

Belyea, Michael, *Research Associate Professor*

Bailey, D. E., Mishel, M. H., Belyea, M., Stewart, J. L., & Mohler, J. (2004). Uncertainty intervention for watchful waiting in prostate cancer. *Cancer Nursing*, 27(5), 339-346.

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Blue, Jan, *Director, ITS*

Esposito, N., Redman, R., Moore, K., Foster, B., & Blue, J. (2005). Preventing violence in an academic setting: One school of nursing's approach. *Journal of Nursing Education Perspectives*, 26, 24-28.

Boyington, Alice, *Associate Professor*

Boyington, A. R., Wildemuth, B. W., Dougherty, M. C., & Hall, E. P. (2004). Development of a computer-based system for continence health promotion. *Nursing Outlook*, 52, 241-247.

Sampselle, C. M., Palmer, M. H., Boyington, A. R., O'Dell, K. K., & Wooldridge, L. (2004). Prevention of urinary incontinence in adults: Population-based strategies. *Nursing Research*, 53(6 Suppl), S61-S67.

Brown, Debra, *Assistant Professor*

Brown, D. J. (2004). Everyday life for Black American adults: Stress, emotions and blood pressure. *Western Journal of Nursing Research*, 26(5), 499-514.

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Brunnsen, Susan, *Assistant Professor*

Beuscher, P. A., Whitmire, T. J., Brunnsen, S., Nelson, D., Howell, E. E., & Kulttz-Hile, C. (2005). Children who are medically fragile in North Carolina: Prevalence and medical care costs in 2002. *SCHS Studies*, 147. Available on-line at: <http://www.schs.state.nc.us/SCHS/>.

Carlson, John, *Research Associate Professor*

Kjervik, D. K., Carlson, J., & Weisensee, M. G. (2004). Incapacity assessment of older persons: A tool to reduce subjectivity in decisions about guardianship. *Journal of Nursing Law*, 9(3), 37-44.

Cronenwett, Linda, *Dean & Professor*

Cronenwett, L. (2004). A present-day academic perspective on the Carolina nursing experience: Building on the past, shaping the future. *Journal of Professional Nursing*, 20(5), 300-304.

Davis, Leslie, *Clinical Associate Professor*

Davis, L. (2005). Treatment modalities and the long-term treatment of patients with heart failure. *CE-Today for Nurse Practitioners*, 4(2), 17-27.

Davis, L. & Largay, J. (2004). Current management strategies of acute coronary syndrome in patients with diabetes mellitus. *CE-Today for Nurse Practitioners*, 3(6), 17-26.

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Dieckmann, Janna, *Assistant Professor*

Diekmann, J. L. (2004). Home health care administration: An overview. In M.D. Harris (Ed.), *Handbook of home health care administration* (4th ed., pp. 3-5). Sudbury, MA: Jones and Barlett Publishers.

Dougherty, Molly, Professor

Arcury, T., Skelly, A., Gesler, W., & Dougherty, M. (2004). Diabetes meanings among those without diabetes: Explanatory models of Latinos in rural North Carolina. *Social Science and Medicine*, 59, 2183-2193.

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Eaves, Yvonne, Assistant Professor

Eaves, Y. D., McQuiston, C., & Miles, M. S. (2005). Coming to terms with adult sibling grief: When a brother dies from AIDS. *Journal of Hospice & Palliative Nursing*, 7(3), 139-149.

Esposito, Noreen, Assistant Professor

Esposito, N. (2005). Agenda dissonance: Immigrant Hispanic women's and providers' assumptions and expectations for menopause health care. *Clinical Nursing Research*, 14, 32-56.

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Flippen, Chenoa, Research Assistant Professor

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Parrado, E. A., Flippen, C., & McQuiston, C. (2004). Use of commercial sex workers in the southeastern United States: Implications for the diffusion of HIV. *Perspectives on sexual and reproductive health*, 36(4), 150-156.

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Fogel, Catherine, Professor

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Foley, Barbara Jo, Clinical Professor

Foley, B. J. & Woodard, E. (2005). Development and implementation of a clinical leadership continuing education certificate program. *Nurse Leader*, 3, 3.

Foster, Beverly, Clinical Associate Professor

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Goeppinger, Jean, Professor

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Harlan, Christina, Research Instructor

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- Mark, Barbara, Russell Professor**
- Mark, B., Harless, D., & McCue, M. (2005). The impact of HMO penetration on the relationship between nurse staffing and quality of care. *Health Economics*, 14(7), 737-753.
- McQuiston, Chris, Associate Professor**
- Eaves, Y. D., McQuiston, C., & Miles, M. S. (2005). Coming to terms with adult sibling grief: When a brother dies from AIDS. *Journal of Hospice & Palliative Nursing*, 7(3), 139-149.
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- Parrado, E. A., Flippen, C., & McQuiston, C. (2005). Migration and relationship power among Mexican women. *Demography*, 42(2), 347-372.
- Miles, Margaret, Professor**
- Eaves, Y. D., McQuiston, C., & Miles, M. S. (2005). Coming to terms with adult sibling grief: When a brother dies from AIDS. *Journal of Hospice & Palliative Nursing*, 7(3), 139-149.
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- Mishel, Merle, Kenan Professor**
- Bailey, D. E., Mishel, M. H., Belyea, M., Stewart, J. L., & Mohler, J. (2004). Uncertainty intervention for watchful waiting in prostate-cancer. *Cancer Nursing*, 27(5), 339-346.
- Moore, Katherine, Clinical Assistant Professor**
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- Palmer, Mary H., Umphlet Professor**
- Palmer, M. (2004). Physiologic and psychologic age-related changes that affect urologic clients. *Urologic Nursing*, 24(4), 247-252.
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- Pletsch, P. K. & Kratz, A. T. (2004). Why do women stop smoking during pregnancy? Cigarettes taste and smell bad. *Health Care for Women International*, 25, 671-679.
- Pun, Brenda Truman, Clinical Instructor**
- Ely, E. W., Shintani, A., Truman, B., Speroff, T., Gordon, S., Harrell, F. E., et al. (2004). Delirium as a predictor of mortality in mechanically ventilated patients in the intensive care unit. *Journal American Medical Association*, 291, 1753-1762.
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- Sánchez, Victoria, Research Assistant Professor**
- Cho, H., Hallfors, D., Sánchez, V., & Khatapoush, S. (2005). Evaluation of a high school peer group intervention for at-risk youth. *Journal of Abnormal Child Psychology*, 33(3), 363-374.
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- Sandelowski, Margarete, Boshamer Professor**
- Barroso, J. & Sandelowski, M. (2004). Substance abuse in HIV-positive women. *Journal of the Association of Nurses in AIDS Care*, 15(5), 48-59.
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- Sandelowski, M. (2004). *Devices and desires: Gender, technology, and American nursing* [translated edition]. Tokyo: Japanese Nursing Association Publishing.
- Sandelowski, M. (2004). Happy tenth anniversary, nursing inquiry [Guest editorial]. *Nursing Inquiry*, 11, 209.
- Sandelowski, M. (2004). Using qualitative research. *Qualitative Health Research*, 14, 1366-1386.
- Sandelowski, M. (2005). I speak English, don't I? [Editorial]. *Research in Nursing & Health*, 28, 185-186.
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- Schwartz, Todd, Research Assistant Professor**
- Holditch-Davis, D., Scher, M., & Schwartz, T. (2004). Respiratory development in preterm infants. *Journal of Perinatology*, 24, 631-639.
- Holditch-Davis, D., Scher, M., Schwartz, T., & Hudson-Barr, D. (2004). Sleeping and waking state development in preterm infants. *Early Human Development*, 80, 43-64.
- Smith, Elaine, Clinical Assistant Professor**
- Smith, E. L. (2005). Evaluating the effectiveness of a clinical leadership institute on the performance of nurse managers. *Journal of Nursing Administration*, 35(5), 225-227.
- Smith, E. L. & Tonges, M. (2004). The Carolina nursing experience: A service perspective on an academic-service partnership. *Journal of Professional Nursing*, 20(5), 305-310.
- Smith, E. L. & Tonges, M. (2005). Leader to watch: Mary Tonges, RN, PhD, FAAN, [Interview by Elaine Smith]. *Nurse Leader*, 3(3), 12-15.

Thompson, Deborah, *Clinical Associate Professor*

Engberg, S., Kincade, J. E., & Thompson, D. (2004). Shaping future directions on incontinence research: Frail elders. *Nursing Research*, 53(6 Suppl), S22-S29.

Thoyre, Suzanne, *Associate Professor*

Pridham, K. F., Bhattacharya, A., Thoyre, S. M., Stewart, D., Bamberger, J., Wells, J., Green, C., Greer, F., Green-Sotos, P., & O'Brien, M. (2005). Exploration of the contribution of biobehavioral variables to the energy expenditure of preterm infants. *Biological Research for Nursing*, 6(3), 216-229.

Thoyre, S. (2005). Transitioning from gavage. *eNeonatal Review*, 2(9). <http://hopkinscme.org/ofp/eneonatal-review/index.html>.

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Tonges, Mary, *Clinical Professor*

Smith, E. L. & Tonges, M. (2004). The Carolina nursing experience: A service perspective on an academic-service partnership. *Journal of Professional Nursing*, 20(5), 305-310.

Smith, E. L. & Tonges, M. (2005). Leader to watch: Mary Tonges, RN, PhD, FAAN, [Interview by Elaine Smith]. *Nurse Leader*, 3(3), 12-15.

Van Riper, Marcia, *Associate Professor*

Ball, J., Van Riper, M., Engstrom, E., & Matheson, J. (2005). Incidental finding of ultrasound markers of Down syndrome in the second trimester of pregnancy: a case study. *Journal of Midwifery and Womens Health*, 50, 243-245.

Van Riper, M. (2005). Genetic testing and the family. *Journal of Midwifery and Women's Health*, 50, 210-219.

Van Riper, M. & Gallo, A. (2005). Family, health, and genomics. In D. R. Crane & E. S. Marshall (Eds.) *Handbook of families and health: Interdisciplinary perspectives*, (pp. 195-217). Thousand Oaks: Sage Publications Inc.

Waldrop, Julee, *Clinical Assistant Professor*

Waldrop, J. B. (2004, September). Are SSRIs safe for childhood depression? *The Clinical Advisor*, 26-32.

Waldrop, J. B. (2004). Case study: A three-year-old with middle-ear effusion and inflammation. *Ear Clinic*, 1(1), 6.

Waldrop, J. B. (2004). ePocrates essentials: I don't practice without it. Available online at <http://www.epocrates.com/hedlines/story/10179.html>.

Waldrop, J. B. (2004, October). Kids with high BP need treatment. *The Clinical Advisor*, 124.

Waldrop, J. B. (2004). Motivational interviewing. *NP News, Official Newsletter of the NCNA Council of Nurse Practitioners*, 13(3), 5.

Waldrop, J. B. (2004). Review of ePocrates essentials. Available online at http://www.pdacortex.com/Review_ePocrates_Essentials.htm.

Waldrop, J.B. (2004, July). Screening for female athlete triad. *The Clinical Advisor*, 116.

Waldrop, J. B. (2004). SSRI debate hurts kids. *Advance for Nurse Practitioners*, 12(12), 65.

Waldrop, J. B. (2005). Concerned about black box warning on SSRI? *NP News Official Newsletter of the NCNA Council of Nurse Practitioners*, 14(1), 5.

Waldrop, J. B. (2005). Early identification and interventions for female athlete triad. *Journal of Pediatric Health Care*, 19, 213-220.

Waldrop, J. B. (2005, April). Finding support on the internet. *The Clinical Advisor*, 116.

Waldrop, J. B. (2005, January). Here comes advanced practice nursing. *The Clinical Advisor*, 110.

Waldrop, J. B. (2005). Rules for dispensing of controlled substances applies to stimulants. *NP News, Official Newsletter of the NCNA Council of Nurse Practitioners*, 14(2), 6, 11.

West, Vivian, *Research Assistant Professor*

West, V. & Milio, N. (2004). Organizational and environmental factors affecting the utilization of telemedicine in rural home healthcare. *Home Health Care Services Quarterly*, 23(4), 49-67.

West, D., Mangiameli, P., Rampal, R., & West, V. (2005). Ensemble strategies for a medical diagnostic decision support system: A breast cancer diagnosis application. *European Journal of Operational Research*, 16, 532-551.

Major Research Project Sites

July 2004–June 2005



Faculty Grant Review Activities 2004–2005 Academic Year

Beeber, Linda, *Professor*

Member, Special Emphasis Panel (ZRG1), National Institute of Mental Health, National Institutes of Health, 2004.

Carlson, Barbara, *Assistant Professor*

Temporary Member, Nursing Science: Adults and Older Adults Study Section [NSAA], Center for Scientific Review, National Institutes of Health, 2005.

Funk, Sandra, *Professor*

Member, Special Emphasis Panel, Institutional Training Grants (T32) (ZNR1-80), National Institute of Nursing Research, National Institutes of Health, 2004.

Harrell, Joanne, *Professor*

Temporary Member, Nursing Science: Children and Families Study Section, Center for Scientific Review, National Institutes of Health, 2004.

Holditch-Davis, Diane, *Professor*

Member, National Institute of Nursing Research Initial Review Group, National Institutes of Health, 2002-2006.

Member, Special Emphasis Panel (92005/01 ZRG1 HOP-M (06) (M)), Nursing Science: Children and Families Study Section, Center for Scientific Review, National Institutes of Health, 2005.

Collateral Reviewer, Sigma Theta Tau Research Committee, January 1991 – 2005.

Mazzocco, Gail, *Clinical Assistant Professor*

Ad Hoc Reviewer, Grant Selection Committee, North Carolina Center for Nursing, 2005.

Ad Hoc Reviewer, Model AHEC Grant Review Curriculum Development, BHP, HRSA, Department of Health and Human Services, 2005.

Powell, Bill, *Assistant Professor*

Member, Review Panel for Faculty Curriculum Development awards, University Center for International Studies, University of North Carolina at Chapel Hill, 2005.

Rowsey, Pamela Johnson, *Associate Professor*

Temporary Member, Nursing Science: Adults and Older Adults Study Section [NSAA], Center for Scientific Review, National Institutes of Health, 2005.

Collateral Reviewer, Grants Review Committee, American Nurses Foundation, 2003-present.

Sandelowski, Margaret, *Boshamer Professor*

Reviewer, Special Emphasis Panel, National Institute of Nursing Research, National Institutes of Health, 2005.

Smith, Elaine, *Clinical Assistant Professor*

Reviewer, Nursing Retention Grants, BHP, HRSA, Department of Health and Human Services, 2004.

Faculty Editorial and Abstract Review Activities 2004–2005 Academic Year

Angle, Bonnie, *Clinical Associate Professor*

Reviewer, *Research in Nursing & Health*

Boyington, Alice, *Associate Professor*

Scientific Reviewer, American Medical Informatics Association Annual Symposium, 2005
Reviewer, *Nursing Research*
Reviewer, *Computers, Informatics, Nursing*
Reviewer, *Journal of Wound, Ostomy, and Continence Nursing*

Brown, Linda, *Clinical Assistant Professor*

Reviewer, *American Journal for Nurse Practitioners*
Reviewer, *Journal of the American Academy of Nurse Practitioners*
Reviewer, *Western Journal of Nursing Research*

Brunssen, Susan, *Assistant Professor*

Reviewer, *Journal of Perinatology*
Reviewer, *New Toxicology*

Carlson, Barbara Waag, *Assistant Professor*

Reviewer, *Biological Research for Nursing*
Reviewer, *Physics in Medicine and Biology*
Reviewer, *Physiological Measurement*
Reviewer, *Heart & Lung*
Abstract Reviewer, Social Research Policy and Practice Session, Gerontological Society of America, 2004
Abstract Reviewer, Southern Nursing Research Society, 2004
Abstract Reviewer, American Association of Professional Sleep Societies, 2004

Cronenwett, Linda, *Dean and Professor*

Reviewer, *Health Services Research*

Dieckmann, Janna, *Assistant Professor*

Reviewer, *Nursing Research*

Dougherty, Molly, *Professor*

Editor, *Nursing Research*
Member, Editorial Board, *International Urogynecology Journal*

Eaves, Yvonne, *Assistant Professor*

Reviewer, *Journal of Advanced Nursing*
Reviewer, *Nursing Research*

Esposito, Noreen, *Assistant Professor*

Reviewer, *Qualitative Health Research*
Abstract Reviewer, *Southern Nursing Research Society*

Fogel, Catherine, *Professor*

Reviewer, *Journal of Urban Development*
Reviewer, *Journal of Marriage and Family*

Funk, Sandra, *Professor*

Reviewer, *Research in Nursing & Health*

Goeppinger, Jean, *Professor*

Member, Editorial Board, *Journal of Family and Community Health*
Reviewer, *Qualitative Health Research*
Reviewer, *International Quarterly of Community Health Education*
Reviewer, *American Journal of Public Health*
Reviewer, *Health Education and Behavior*
Reviewer, *Arthritis Care and Research*

Harrell, Joanne, *Professor*

Reviewer, *Research in Nursing & Health*
Reviewer, *Journal of Adolescent Health and Pediatrics*
Abstract Reviewer, 2004 American Heart Association Cardiovascular Epidemiology Meetings

Havens, Donna, *Professor*

Reviewer, *The Journal of Nursing Administration*
Reviewer, *Medical Care*

Holditch Davis, Diane, *Kenan Professor*

Member, Editorial Board, *Neonatal Network*
Member, Editorial Board, *Journal of Perinatology*
Reviewer, *Research in Nursing & Health*
Reviewer, *Journal of Obstetric, Gynecologic, and Neonatal Nursing*
Reviewer, *Journal of Advanced Nursing*
Reviewer, *Qualitative Health Research*
Reviewer, *Sleep*
Reviewer, *Advances in Neonatal Care*
Reviewer, *Journal of Perinatology*
Reviewer, *Southern Online Journal of Nursing Research*
Reviewer, *Behavioral Sleep Medicine*
Reviewer, *Fertility and Sterility*
Abstract Reviewer, Southern Nursing Research Society Meeting, 2004-2005
Abstract Reviewer, Society for Research in Child Development, 2004
Member, International Scientific Advisory Panel for the Royal College of Nursing of the United Kingdom's Annual International Research Conference, 2004-2005

Hughes, Linda, *Research Associate Professor*

Reviewer, *Nursing Research*
Reviewer, *Western Journal of Nursing Research*

Kaufman, Jane, *Clinical Associate Professor*

Reviewer, *Heart & Lung*
Reviewer, *Elsevier Mosby Publishing*

Kjervik, Diane, *Professor*

Editor in Chief, *Journal of Nursing Law*
Member, Editorial Board, *Journal of Nursing Law*
Reviewer, *Journal of Advanced Nursing*
Reviewer, *The Journal of Nursing Scholarship*
Reviewer, *Issues in Mental Health Nursing*
Reviewer, *Research in Nursing & Health*
Reviewer, *Nursing Outlook*
Reviewer, *Journal of Professional Nursing*

Lynn, Mary, *Associate Professor*

Reviewer, *Western Journal of Nursing Research*
Reviewer, *Journal of Professional Nursing*
Reviewer, *Clinical Nursing Research*
Reviewer, *Journal of Nursing Measurement*
Reviewer, *Social Science Medicine*
Reviewer, *Research in Nursing & Health*

Mark, Barbara, *Russell Professor*

Reviewer, *Medical Care*
Reviewer, *Research in Nursing & Health*
Reviewer, *Canadian Journal of Nursing Research*
Reviewer, *Journal of Nursing Scholarship*

Miles, Margaret, *Professor*

Member, Editorial Board, *Journal of Pediatric Nursing*
Reviewer, *Journal of Pediatric Nursing*
Reviewer, *Advances in Neonatal Care*
Reviewer, *Health Care for Women International*
Reviewer, *Journal for Specialists in Pediatric Nursing*
Reviewer, *Nursing Research*
Reviewer, *Parenting*
Reviewer, *Research in Health and Nursing*
Reviewer, *Journal of the American Medical Women's Association*

Mishel, Merle, *Kenan Professor*

Reviewer, *Quality of Life Research*
Reviewer, *Psycho-Oncology*
Reviewer, *Journal of Consulting and Clinical Psychology*
Reviewer, *Western Journal of Nursing Research*

Palmer, Mary H., *Umphlet Professor*

Nursing Section Editor, *Journal of the American Geriatrics Society*
Column Co-editor, *Bladder Matters, American Journal of Nursing*
Member, Editorial Board, *Geriatric Nursing*
Member, Editorial Board, *Clinical Geriatrics*
Reviewer, *Western Journal of Nursing Research*

Pletsch, Pamela, Associate Professor

Reviewer, *Health Care for Women International*
 Reviewer, *Annals of Behavioral Medicine*
 Reviewer, *Western Journal of Nursing Research*
 Reviewer, *Nursing Outlook*
 Reviewer, *Social Science and Medicine*
 Reviewer, *Research in Nursing & Health*

Rowsey, Pamela J., Associate Professor

Reviewer, *Research in Nursing & Health*
 Reviewer, *Physiology and Behavior*
 Reviewer, *Elsevier Publishing*

Sandelowski, Margarete,**Boshamer Distinguished Professor**

Associate Editor, *Research in Nursing & Health*
 North American Editor, *Nursing Inquiry*
 Member, *Editorial Advisory Board, Advances in Nursing Science*
 Member, Editorial Board, *Field Methods*

Schwartz, Todd, Research Instructor

Reviewer, *Research in Nursing & Health*

Skelly, Anne, Associate Professor

Editor, Continuing Education Department,
The Diabetes Educator
 Reviewer, *Diabetes Care*
 Reviewer, *Western Journal of Nursing Research*
 Reviewer, *Journal of the American Academy of Nurse Practitioners*

Thoyre, Suzanne, Associate Professor

Member, Editorial Board, *Journal of Obstetric, Gynecologic, and Neonatal Nursing*
 Reviewer, *The American Journal of Maternal Child Nursing*
 Reviewer, *Journal of Perinatology*
 Reviewer, *Health Care for Women International*

Van Riper, Marcia, Associate Professor

Reviewer, *Journal of Genetic Counseling*
 Reviewer, *Clinical Genetics*
 Reviewer, *Genetics in Medicine*

Faculty Honors and Awards 2004–2005 Academic Year

Alexander, Rumay, Clinical Assistant Professor

Southeast Nursing Excellence "Advancing the Profession" Award, Nursing Spectrum, 2005.

Beeber, Linda, Professor

Emerging Star in Health Disparities Award, Howard University, 2004.

Black, Beth, Clinical Associate Professor

Mickel-Shaw Excellence in Academic Advising Award, College of Arts and Sciences and the General College, University of North Carolina at Chapel Hill, 2004.

Cronenwett, Linda, Dean & Professor

Honorary Doctor of Science Degree from the University of Nebraska Medical Center, 2005.

Davis, Leslie, Clinical Associate Professor

AJN Critical Care Book of the Year Award, 2004
 Excellence in Classroom Education: 14-month BSN Class of 2005, School of Nursing, University of North Carolina at Chapel Hill.

Dougherty, Molly, Professor

Continence Care Champion, National Alliance for Continence, 2004.

Ferreiro, Beverly, Clinical Associate Professor

Excellence in Clinical Instruction: 14-month BSN Class of 2005, School of Nursing, University of North Carolina at Chapel Hill.

Halloran, Edward, Associate Professor

Nurse Educator of the Year, North Carolina Nurses Association, 2004.

Havens, Donna, Professor

Fellow, The American Academy of Nursing, 2004.

Kjervik, Diane, Professor

Outstanding Advocate Award, The American Association of Nurse Attorneys, 2004.

Palmer, Mary H., Umphlet Professor

Nurse Competence in Aging Literary Excellence Award, Urologic Nursing, 2004.

Skelly, Anne, Associate Professor

Outstanding Research Award, National Organization of Nurse Practitioner Faculties (NONPF), 2004
 Distinguished Alumna, School of Nursing, University of Buffalo, 2004.

Van Riper, Marcia, Associate Professor

Excellence in Classroom Instruction: 14-month BSN Class of 2005, School of Nursing, University of North Carolina at Chapel Hill.

Woodley, Lisa, Clinical Assistant Professor

Excellence in Clinical Education: 24-month BSN Class of 2005, School of Nursing, University of North Carolina at Chapel Hill.

Doctoral Student and Post-Doctoral Fellow Activities 2004–2005 Academic Year

INDIVIDUAL GRANTS

Amoako, E., Principal Investigator; **Skelly, A., & Funk, S.**, Sponsors. *Diabetes Uncertainty Management Intervention for Older African American Women*. Pre-doctoral Fellowship, John A. Hartford, 2002–2004.

Bond, S., Principal Investigator; **Neelon, V.**, Sponsor. *An Exploratory Study of Delirium in Older Home Hospice Patients with Advanced Cancer*. Pre-doctoral Fellowship, American Cancer Society, 2003–2005.

Bond, S., Principal Investigator; **Neelon, V.**, Sponsor. *Trajectories and Patterns of Delirium in Older Adults with Advanced Cancer*. Sigma Theta Tau, 2005–2006.

Clayton, M. Principal Investigator; **Mishel, M.**, Sponsor. *Communication in Breast Cancer Survivors*. American Nurses Foundation, 2004–2005.

Greene, N., Principal Investigator; **Harrell, J.**, Sponsor. *The Influences of Family Function on Dietary Intake*. National Research Service Award, National Institute of Diabetes and Digestive and Kidney Diseases, National Institutes of Health, 2004–2006.

Jessup, A., Principal Investigator; **Harrell, J.**, Sponsor. *Adiponectin and Risk Factors for Cardiovascular Disease and Diabetes in Youth*. Smith Graduate Research Award, University of North Carolina at Chapel Hill, 2004–2005.

Jessup, A., Principal Investigator; **Harrell, J.**, Sponsor. *Adiponectin and Risk Factors for Cardiovascular Disease and Diabetes in Youth*. National Research Service Award, National Institute of Nursing Research, National Institutes of Health, 2005–2007.

Knobel, R., Principal Investigator; **Holditch-Davis, D.**, Sponsor. *Physiological Effects of Thermoregulation in Transitional ELBW Infants*. National Research Service Award, National Institute of Nursing Research, National Institutes of Health, 2004–2006.

Knobel, R., Principal Investigator; **Holditch-Davis, D.**, Sponsor. *Physiological Effects of Thermoregulation in Transitional ELBW Infants*. American Nurses Foundation, 2004–2005.

Knobel, R., Principal Investigator; **Holditch-Davis, D.**, Sponsor. *Physiological Effects of Thermoregulation in Transitional ELBW Infants*. Foundation for Neonatal Research and Education, 2005.

Lambe, C., Principal Investigator; **Germino, B.**, Sponsor. *Complementary & Alternative Therapy Use During Early Stage Breast Cancer*. Center for Innovation in Health Disparities Research, School of Nursing, The University of North Carolina at Chapel Hill, National Institute of Nursing Research, National Institutes of Health, 2005–2006.

Larson, K., Principal Investigator; **McQuiston, C.**, Sponsor. *Latino Adolescents and Sexual Risk Behaviors*. Off-Campus Dissertation Award, University of North Carolina at Chapel Hill, 2004–2005.

Larson, K., Principal Investigator; **McQuiston, C.**, Sponsor. *Latino Adolescents and Sexual Risk Behaviors*. Center for Innovation in Health Disparities Research, School of Nursing, The University of North Carolina at Chapel Hill, National Institute of Nursing Research, National Institutes of Health, 2003–2004.

Lunsford, V., Principal Investigator; **Germino, B.**, Sponsor. *Women's Initiation of a More Physically Active Lifestyle after a Cardiac Event: Processes, Patterns, and Influences*. Smith Graduate Research Award, University of North Carolina at Chapel Hill, 2005–2006.

Lunsford, V., Principal Investigator; **Germino, B.**, Sponsor. *Women's Initiation of a More Physically Active Lifestyle after a Cardiac Event: Processes, Patterns, and Influences*. Sigma Theta Tau, 2004–2005.

Pearce, P., Principal Investigator; **Harrell, J.**, Sponsor. *Designing with Children for Children: Activity Recall*. National Research Service Award, National Institute of Nursing Research, National Institutes of Health, 2002–2004.

Pearce, P., Principal Investigator; **Harrell, J.**, Sponsor. *Designing with Children for Children: Physical Activity Recall*. American Nurses Foundation, 2003–2004.

Polzer, R., Principal Investigator; **Miles, M.**, Sponsor. *Spirituality in African Americans with Diabetes*. National Research Service Award, National Institute of Nursing Research, National Institutes of Health, 2004–2005.

Thompson, K., Principal Investigator; **Mishel, M.**, sponsor. *The Relationship Among Social Support, Spiritual Well-being, Uncertainty and Self-care in Older Heart Failure Patients*. Mu Alpha Sigma Theta Tau Research Award, 2005.

Van Horn, E., Principal Investigator; *A Study of Resource Loss, Coping, and Symptoms of Depression after Traumatic Injury*. Smith Graduate Research Award, University of North Carolina at Chapel Hill, 2004-2005.

Van Horn, E., Principal Investigator; *A Study of Resource Loss, Coping, and Symptoms of Depression after Traumatic Injury*. Sigma Theta Tau, 2004-2005.

Weis, K., Principal Investigator. *Military Families: Psychosocial Adaptation to Pregnancy*. TriServices Nursing Research Program, 2002-2005.

INSTITUTIONAL NRSA PRE-DOCTORAL AWARD RECIPIENTS

Pre-Doctoral Students

Carter, B. (Holditch-Davis, D., sponsor). *Chronic Complications Related to Neonatal Sepsis - Investigation Into Nursing Practices that Impact Neonatal Sepsis*, 2003-2005.

Gambrell, M. (Lynn, M., sponsor). *Instrument Development: Nurses' Satisfaction with Providing End of Life care in the ICU*, 2004-2006.

Gates, M. (Mark, B., sponsor). *Value Congruence as a Moderator of the Diversity-Outcome Relationship*, 2004-2005.

Greene, Natasha (Harrell, J., sponsor). *Influences of Social Support on Patients with Diabetes*, 2002-2004.

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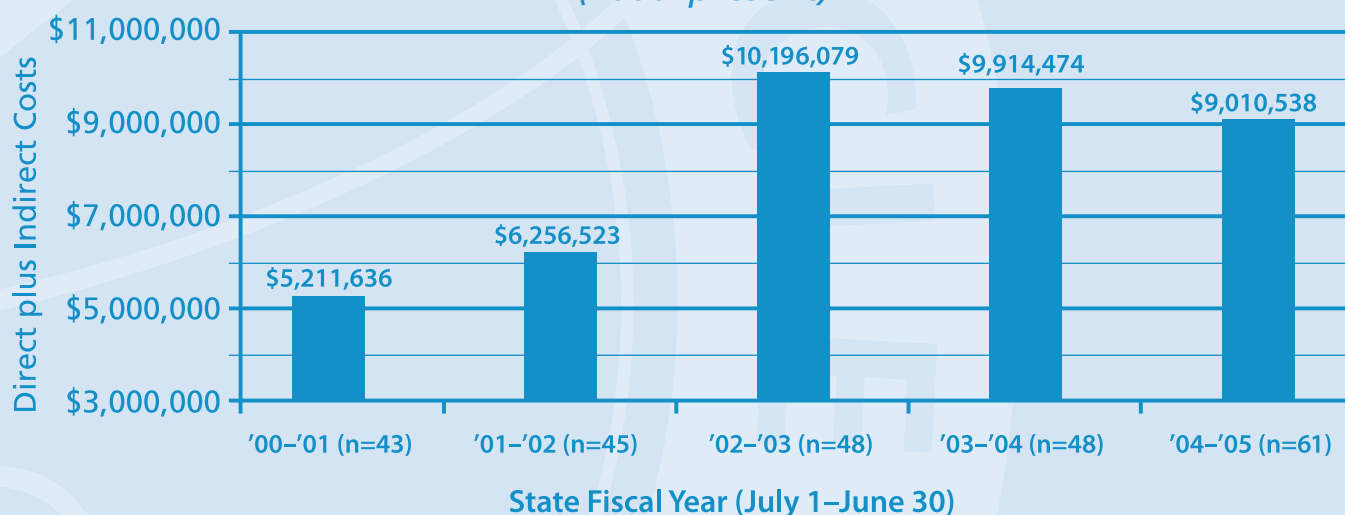
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